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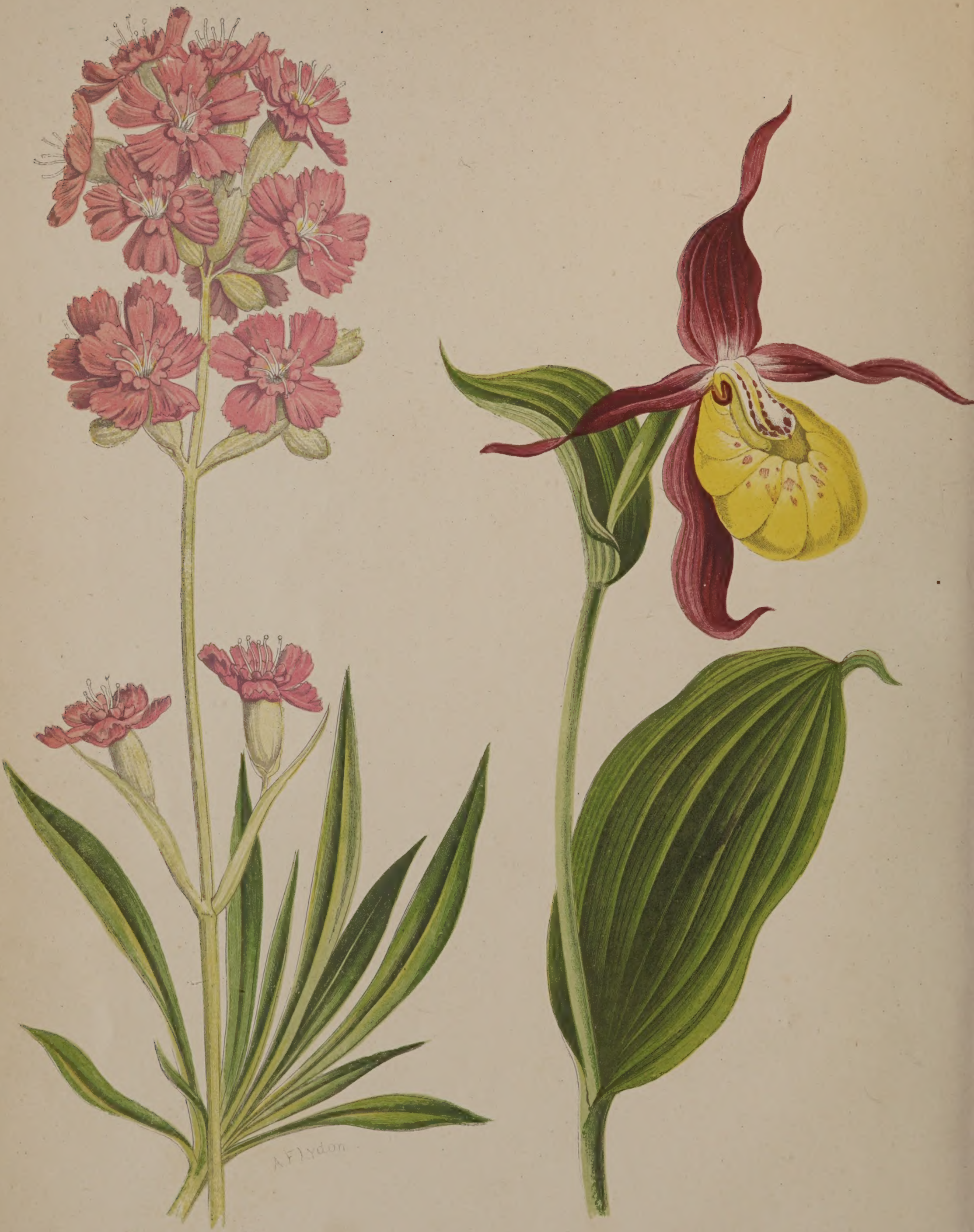

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LYCHNIS VISCARIA SPLENDENS. CYPRIPEDIUM CALCEOLUS.

I

ALPINE PLANTS:

FIGURES AND DESCRIPTIONS OF SOME OF

THE MOST STRIKING AND BEAUTIFUL OF

THE ALPINE FLOWERS.

EDITED BY

DAVID WOOSTER, F.R.H.S.,

[illegible]

Joint-Editor of the latest edition of Loudon's Encyclopaedia of Plants; Loudon's Hortus Britannicus, etc.

LONDON:

BELL AND DALDY, YORK STREET, COVENT GARDEN.

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LONDON:
BELL AND DALDY, YORK STREET, COVENT GARDEN.
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TO

SIR WALTER CALVERLEY TREVELYAN,

OF WALLINGTON, NORTHUMBERLAND, AND NETTLECOMBE, SOMERSETSHIRE, BARONET,

THE LIBERAL PATRON

OF SCIENCE, LITERATURE, AND ART,

THE ENLIGHTENED IMPROVER OF HIS LARGE LANDED ESTATES,

THE PERSISTENT PROMOTER

OF ALL GOOD AND PHILANTHROPIC OBJECTS,

WHO HAS LONG TAKEN A

GREAT INTEREST IN THE FLORA OF ALPINE REGIONS

THIS WORK IS DEDICATED

BY

THE AUTHOR.

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PREFACE.

THIS work had its origin in a desire to aid in some measure the efforts which have lately been made by several writers to restore to popular favour the very beautiful little plants which are mostly natives of high latitudes, and which for some years have been treated with unmerited neglect, from the popular taste having, as it is very wont to do, entirely changed—in the instance now referred to, in favour of half-hardy plants with very brilliant flowers, or beautifully-coloured leaves, massed in beds in geometric and other flower-gardens, or arranged in straight or zigzag lines, or in patterns, in large single beds. Though these have, in numerous instances, been most skilfully and artistically arranged, yet, as the number of plants suitable for producing the desired effect happens to be somewhat limited, in the case of large designs the same kinds have had to be employed again and again, and thus, at length, many have come to regard this style of flower-garden decoration as being open to the charge of sameness and monotony. A change in the public taste being thus once more discernible, it was considered that a favourable opportunity presented itself for the appearance of a work that should contain figures, accurately drawn and faithfully coloured from Nature, together with brief descriptions of some of the rarest, and the most striking and beautiful of the Alpine Flowers; and, aided by skilful artists, the Author undertook the task.

As the illustrations have been almost entirely drawn from living specimens, the plants have had to be taken as they could be obtained in flower. Thus it has not been possible for the Author to follow either a systematic or an alphabetical plan of arrangement. A remedy for this will, however, be found in the systematic index (in which the plants figured and described are arranged according to the Natural System), and in the very complete general index.

The botanic names have been accented to show the uninitiated on which syllable the emphasis is to be laid. It will be observed that the accent is always on a vowel, and it should be borne in mind that every syllable must be pronounced, whether accented or not. When the accent is acute, thus: *á*, it signifies that the consonant following the vowel is to be taken into the syllable; and when the accent is grave, thus: *à*, that the vowel finishes the syllable. Thus *Andrósace* is pronounced *An-drós-a-cè;* and *Aquilègia*, *A-qui-lè-già;* while as a proof that every syllable is pronounced, *Hepática* is called *He-pat-i-cà.*

The Author ventures to hope that his work may be honoured with such a share of public favour as will warrant his proceeding with the completion of his design.

D. W.

London, October 28th., 1871.

INTRODUCTION.

THE cultivation of Alpine Plants, or, as the term implies, plants which are natives of alpine or mountainous regions in various parts of the globe, but chiefly inhabiting the temperate or frigid zones, has for some years past been mainly confined to gardens strictly botanical. A taste for their possession is, however, now on the increase, and collections are to be found in some of the private gardens of Great Britain and Ireland. These interesting plants are exceedingly well-adapted for amateurs having limited accommodation, for they occupy little room and are not expensive to purchase, and a good many of them are of comparatively easy culture, blooming from early spring till late in the autumn, and some even throughout the winter.

Though a very general assemblage of plants is formed by gardeners under the title of Alpines, these plants ought properly to be limited to such as grow on high mountains. The gardener, however, adds to them all very dwarf herbaceous plants that are somewhat difficult to preserve in a state of cultivation. Some of these, instead of being alpine, are arenarious, sea-side, or bog-plants. Alpine plants are almost universally very low, bushy, and evergreen. They are very often planted on rockwork or in other suitable situations, or they may be grown in pots plunged to the rim in sand or coal-ashes, within a cool pit, so constructed that a sufficient protection from frost and wet may be afforded them during winter; for, however strange it may appear, plants from the frozen regions of Spitzbergen, Melville Island, and other parts, will not survive our winters without a certain amount of protection. In their native habitats they are protected from intense frost and damp by thick coverings of snow, during which period they are also confined to total darkness. The atmosphere which surrounds them is of light or thin air, almost always charged with vapour; and the soil in which they grow is generally soft, black, and peat-like, forming a thin stratum on rock, or filling up the chinks of rocks or stones, and always moist. Art imitates these circumstances by putting such plants in small pots of peat or bog earth, well drained by gravel, or scarcely drained at all, or mixed with stones, or with sand, according to the habitation to be imitated. The pots are kept, during winter, under glass in frames, or pits, in a situation exposed only to the morning sun; and in summer they are removed to a full northern exposure, or screens are placed so as to produce this effect in their winter situation. In further imitation of these conditions, the pits containing alpine plants are covered, about the end of November, with thin-boarded or felt shutters, which sufficiently exclude the extent of frost that would be injurious to them, and keep them comparatively dry, and nearly deprived of light. Towards spring, air and light must be admitted gradually, as it were in imitation of the progressive melting of the snow, until, by the beginning of March, vegetation begins to revive in the plants, when all the light possible is afforded them, covering them only during very cold or frosty nights: afterwards the covers are removed entirely. During winter, on fine days, the covers should be taken off, that the plants may be examined, and all dampness removed; for, it should be remembered, the artificial covering has a much greater tendency to create damp than the constant covering which the plants have in their native places of growth. This may possibly arise from the variableness of our climate compared with that in which alpines naturally grow.

In March, yearly, the plants should be re-potted, and such species propagated as are required, by division of the plant, by seed, saved during the previous summer, or by cuttings, according to the nature of the various kinds. The soil used should, for a large number of them, be sandy peat and loam in equal proportions; some, however, are grown in sandy peat alone; others, which are only found amongst the *débris* of micaceous rocks, in a soil of which mica, in a reduced state, forms a part; the true bog-plants, in peat-bog soil; while alpine aquatics should be planted in sheer sand, and submerged in tubs of water. The pots generally used are small or large sixties. These will, no doubt, be found most convenient in many cases, but to grow the majority of alpines to the greatest perfection, pots or pans nine inches in diameter and about five inches in depth should be used. These should be perforated at the bottom and round the lower part of the sides with numerous small holes, for admitting air to the roots, and in order to secure ample drainage. From one to two inches of drainage should be placed in the bottom of the pots; and, when the potting is finished, small white pebbles should be placed around the plant on the surface of the soil. Upon these many of the creeping and prostrate kinds recline, and are prevented from damping off, as the air passes freely under and amongst the stems and leaves. The stones also tend to keep the soil uniformly moist, by preventing evaporation; and, in many cases, the roots of some of the rarer species luxuriate more under these stones than elsewhere in the pot. At the beginning of the growing season, abundance of water should be given, often twice a day, for it is certain that alpine plants, in their native habitats, are at that stage nearly at the point of saturation, in consequence of the melting of the snow above and around them. In all mountainous regions a great amount of atmospheric moisture exists, and hence the practice of watering alpine plants overhead with a rose watering pot is beneficial to them.*

Perhaps an improvement in the management of alpine plants would be to set the pots, in the summer season, on a frame or grating of cast iron, placed a few inches distant from a cistern or pool of water, by which means a constant evaporation would take place, and a moist cool atmosphere be produced. Or the pots might be arranged in beds, and a pipe, finely pierced with holes, might pass along the centre of each bed, at such a distance above it as that the shower would just cover the bed. A shower might thus be applied at pleasure, and the plants kept moist by prolonged and gentle rain, instead of being deluged by sudden and heavy rain from the watering pot.

Many alpine plants may be very successfully grown in towns, in back yards, and on house-tops; and it is believed that an extensive collection might be so grown in the centre of London, if placed in frames covered with glass sashes to protect the plants from the numerous atmospheric impurities.

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* For the encouragement of all lovers of Alpines, Messrs. Backhouse, in the new edition of their Catalogue for 1871, make the following statement:—"A large proportion of the truly Alpine species, which find their natural home in the crevices of rocks at a great elevation, grow with perfect ease in an open border, in ordinary loamy soil. And, strange to say, some that succeed with difficulty on artificial rockwork, flourish well under such circumstances, and thus bring within the range of every garden a large and varied amount of beauty."

ALPINE PLANTS.

LYCHNIS VISCARIA SPLENDENS.

PLATE I.—FIG. I.

Lýchnis Viscària spléndens. The splendid clammy Lychnis, or Red German Catchfly.

Natural Order—Caryophyllaceæ. The Pink and Carnation Family.

The *Lýchnis Viscària* is a British perennial, found growing in tufts on dry alpine rocks about Edinburgh, and in other parts of Scotland, and also in Wales—on Craig Wreidhin, in Montgomeryshire. The flowering stems grow about a foot high, producing dense terminal panicles of very ornamental large rose-coloured flowers in June.

The variety figured in our plate *(L. V. spléndens)* has rocket-like heads of clear bright pink flowers, and is extremely ornamental. It is equally suitable for sunny fissures of rockwork, or for the open border. There is one variety with pure white flowers *(L. V. álba)* not uncommon in collections; while the double red-flowered variety *(L. V. β plèna)* is among the most frequent decorations of some of our gardens.

All the kinds of Lychnis do best in a light rich loamy soil, but they should be often taken up and divided, or they will dwindle away: the best time for doing this is early in the spring. The species under notice and its varieties may be easily increased either by division or by seeds.

The generic name of *Lychnis* is from *Lychnos,* a lamp, in allusion, it is said by some, to the cottony leaves of some of the species having been used as wicks for lamps; while others say that the name has been given on account of the brilliancy of the flowers of most of the species.

The order *Caryophyllàceæ* is rather a large one, consisting of annuals or perennials (abundant in the temperate regions of the globe, but rare in the tropics), with opposite, entire, grass-like leaves, mostly without stipules, the branches being usually knotted or jointed at each pair of leaves, the most striking and easily recognised examples of which will be found in the Pinks and Carnations. The flowers, which are generally produced in cymes or panicles, are remarkable for their brilliant colours and their delightful fragrance.

CYPRIPEDIUM CALCEOLUS.

PLATE I.—FIG. II.

Cyprìpedium Calcèolus, Linnæus. The English Lady's Slipper.

Natural Order—ORCHIDACEÆ. The Orchid Family.

THE English Lady's Slipper is one of the most rare as well as one of the most beautiful and interesting of our British plants, and the largest and most striking of our native orchids. As a wild plant it is in great danger of being altogether exterminated by the reprehensible avidity of collectors. The practice of rooting up very rare plants cannot be too strongly deprecated. I know one place in the county of Durham where the English Lady's Slipper still grows; but it would have been exterminated long ago had not the proprietor of the estate (who is a lover of Natural History and a good botanist) fortunately taken the precaution of plucking annually the flowers when in the bud, and thus rendering it somewhat difficult to find the plant in the lovely Dene in which it grows.

This elegant orchid is a perennial, and grows naturally in mountainous woods and thickets: it has fibrous roots, and ovate-lanceolate, ribbed leaves. The flowers, which are produced in July, are solitary; the calyx-leaves (sepals) and the petals are of a purplish-brown, slightly downy, with parallel veins; the lip (slipper), which is of a clear yellow marked internally with deep orange or scarlet hairy lines, is curved, rounded at the extremity by the contraction of the margin, and inflated. Under favourable circumstances the plant will attain the height of from nine to eighteen inches. Mr. James Backhouse, of York, who has succeeded in growing it better than most others, finds that it prefers an eastern shaded aspect, and recommends that it should be planted in narrow fissures of limestone rock, well drained, in rich fibrous loam. It is increased by dividing the roots.

The variety *C. Calcèolus β helvéticum,* which was introduced from Switzerland in 1825, is regarded by some as scarcely distinct from the species.

The generic name, *Cypripèdium,* is from *Kypris,* one of the names of Venus, and *podion* a slipper, in allusion to the elegant slipper-like form of the labellum: hence the name of Venus's or Lady's Slipper.

In scarcely any other order of plants is the structure of the flowers so striking and so remarkable as in those of the very singular and beautiful plants comprising the order *Orchidàceæ.* If the flower (generally called the perianth) of an orchid be examined, it will be found to consist of three outer leaves which are often called sepals, and three inner leaves, called petals. Two of the three inner leaves are lateral and equal, while the other (usually the lower one from the twisting of the ovary) is of a different form, often much larger than the sepals and the lateral petals, sometimes lobed and jointed, and sometimes very small. This odd or lower petal is called the *labellum,* or lip, and it is sometimes furnished at its base with a spur, which contains the nectar so much sought after by insects, whose visits Mr. Charles Darwin maintains (in his very interesting work "On the Fertilization of Orchids") are absolutely necessary in many, if not, indeed, in most, cases, to insure the fertilization of the flowers and the production of good seed. The reproductive organs in orchids are obscure as compared with those of other flowering plants: it is, however, generally considered that the filaments of the three stamens are associated with the style, forming a more or less columnar fleshy process in the centre of the flower, and called the column: upon the fore part of this column the stigma is evident in the form of a little cup secreting a viscid fluid; a single, sessile, two-celled anther (each cell containing the pollen grains cohering together into a waxy "pollen-mass," called a *pollinium*) is placed above it, the central one of the series, the two lateral stamens being imperfect in all the genera of the order with the single exception of *Cypripèdium,* which has two anthers, one on either side of a shield-like central disk, which is regarded as a rudimentary anther, corresponding to the single anther present in all other orchids. In *Cypripèdium* the column projects over the opening into a large, slipper-shaped, hollow labellum. The pollen grains differ from those in all the other orchids: they are not connected together into waxy pollen-masses, called pollinia, but are coated with a viscid fluid, which causes the grains to adhere when rubbed against the stigma, which, in *Cypripèdium,* is not viscid as in all the other orchids.

LINARIA ORIGANIFOLIA.

PLATE II.—FIG. I.

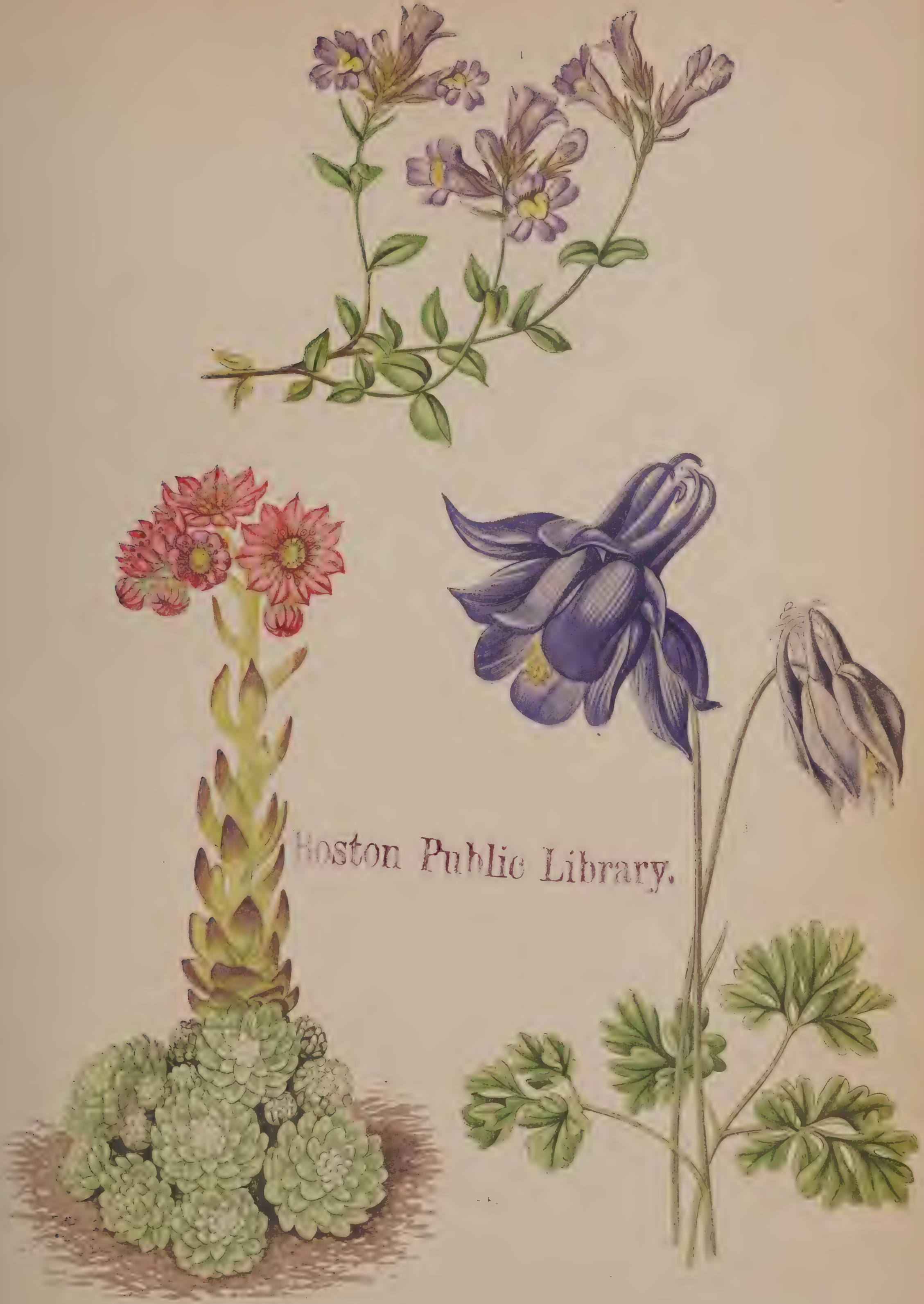
Linària origanifòlia, H. K. The Marjoram-leaved Toad-flax.
Natural Order—Scrophulariaceæ. The Figwort Family.

The genus *Linària* differs from *Antirrhìnum* (the Snapdragon) only in the tube of the corolla being drawn out at the base into a conical or cylindrical spur. The species are more numerous than the Snapdragons, and have a somewhat wider geographical range: the greater number, however, are from the south and south-west of Europe. Two of the best-known British species are *L. Cymbalària* (the Ivy-leaved Toad-flax), and *L. vulgàris*. Of the latter there is a singular and striking variety (*β. Pelòria*), in which the corolla is regular with five spurs—a spur to each petal.

The *L. origanifòlia* is a perennial, with pretty bluish flowers, a native of the south of Europe, whence it was introduced in 1785. It grows about a foot in height, and continues in flower from June to September. It is increased by division. The most suitable soil for it is a mixture of loam and peat (most loam).

The generic name of *Linària* is from *Linum*, flax, in allusion to the similarity of the leaves.

The order *Scrophulariàceæ* is a large one, containing many very beautiful well-known and useful plants, among which may be mentioned, as examples, the Foxglove, the Calceolaria, the Speedwell (*Verónica*), the Mullein, the Sibthorpia, the Figwort (*Scrophulària*), the Mimulus, the Eyebright, the Rattle, the Alonsòa, the *Maurándya* and *Lophospérmum*, the *Paulównia*, *Collínsia*, *Pentstèmon*, and *Torènia*. The plants of the order are widely distributed over the globe, being found from the Arctic Circle to the Tropics: they are, however, more frequently met with in temperate regions than in the extremes of either heat or cold. They are for the most part herbaceous plants with opposite or alternate leaves, which are without stipules, and irregular flowers,



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the corolla being two-lipped or personate, and the stamens being in pairs, and inserted in the tube of the corolla. The capsule is two-celled, with several seeds in each cell.

SEMPERVIVUM ARACHNOIDEUM.

PLATE II.—FIG. II.

Sempervìvum arachnoídeum, Linnæus. The Cobweb Houseleek.
Natural Order—Crassulaceæ. The Crassula Family.

The Houseleeks are for the most part succulent herbaceous plants, a few, however, being shrubs. Some of the species are very ornamental; others are singular and curious. The common Houseleek *(Sempervìvum tectòrum)* is frequently found in Britain on the roofs of buildings and on old walls. The plant is used by country people as an application to burns, inflammations, and ulcers, either alone, in a bruised state, or mixed with cream. Linnæus says that the Houseleek is a preservative to the coverings of houses in Smoland. It may easily be made to cover the whole roof of a building, whether of tiles, thatch, or wood, by securing the offsets with a little earth.

In the Cobweb Houseleek *(S. arachnoídeum)* the tops of the fleshy leaves (which form beautiful little rosettes) are woolly: as they expand they carry this woolly substance with them, which, being thus extended, assumes the appearance of a cobweb, and hence the name of the plant. It was formerly a common practice to treat this beautiful species of Houseleek (which was introduced in 1699) as a native of a warm climate; whereas it is perfectly hardy, braving the cold of exposed parts of the Alps of Switzerland. It will grow well and appear to great advantage on a wall or on rockwork, and it may also be grown in a pot. The more the plant is exposed to the sun, the brighter will be its stems and leaves, and the more brilliant will be its rose-coloured flowers, which appear in June and July. In every collection of Alpine Plants this Houseleek should be found. It grows freely in sandy peat or loam, and is easily increased by offsets, which are produced in abundance. The flower stems grow about six inches high.

The numerous plants contained in the order *Crassulàceæ* (that to which the Houseleek belongs) are readily distinguished by the equal number of the parts of the flower, and by the peculiar succulent character of the leaves. The family extends over the greater part of the globe, abounding more particularly in south-western Africa, and in the rocky districts of Europe and central Asia. Besides Sempervìvum, other well-known genera of this order are Crássula, Cotylèdon, Echevèria, and Sèdum.

AQUILEGIA PYRENAICA.

PLATE II.—FIG. III.

Aquilègia pyrenàica. The Pyrenean Columbine.
Natural Order—Ranunculaceæ. The Ranunculus, or Crowfoot Family.

One species of Columbine (*A. vulgàris*) is now believed to be indigenous in several counties of England, Ireland, and southern Scotland. Of this there are several varieties common in our gardens, the flowers of which differ in form and colour.

The *A. pyrenàica* is a native of the Pyrenees, and was introduced in 1818. It is a dwarf perennial, very suitable for rockwork, growing about a foot high, and producing its deep blue flowers from May to July. It should be grown in sandy peat, and it is increased by seed or by division of the roots.

The figure in our plate is taken from a plant kindly forwarded by Messrs. Backhouse and Sons, of York.

The genus *Aquilègia,* which is a very distinct one, consists of very beautiful perennial herbaceous plants, which are found widely spread over the temperate regions of the northern hemisphere, more particularly in mountainous districts, in the new as well as in the old world. The name of *Aquilègia* is from *aquila,* an eagle: the inverted spurs of the flower having been likened to the talons of a bird of prey.

The order to which the Columbine belongs *(Ranunculàceæ)* is the first in the Natural System of the late Professor de Candolle. Most of the plants contained in it are easily distinguished by their numerous stamens, the anthers of which burst outwardly; by their carpels growing close together without adhering, except in one or two instances; and by the stem-clasping petioles of their leaves, which are generally deeply cut. The flowers have usually a calyx of five sepals, and a corolla of five petals, differing, however, very much in shape, and the calyx of several of them being coloured so as to resemble a corolla. Among the plants of the order are the graceful Clématis, the lowly Anemòne, the glittering Ranúnculus, and the gaudy Pæony; and it may be remarked, that the acrid and poisonous properties of these plants are nearly as powerful as their beauty is great. They are all caustic, and in many of them the deleterious principle is in dangerous abundance. M. de Candolle says that its nature is extremely singular: it is so volatile, that, in most cases, simple drying in the air or infusion in water is sufficient to destroy it. It is neither acid nor alkaline, but its activity is increased by acids, honey, sugar, wine, or alcohol; and it is, in reality, destructible only by water. The geographical range of the order is very extensive. A great many have been discovered in Europe, but so abundant are the plants in all parts of the world, that an order can scarcely be found more universally and equally dispersed.

CAMPANULA TURBINATA.

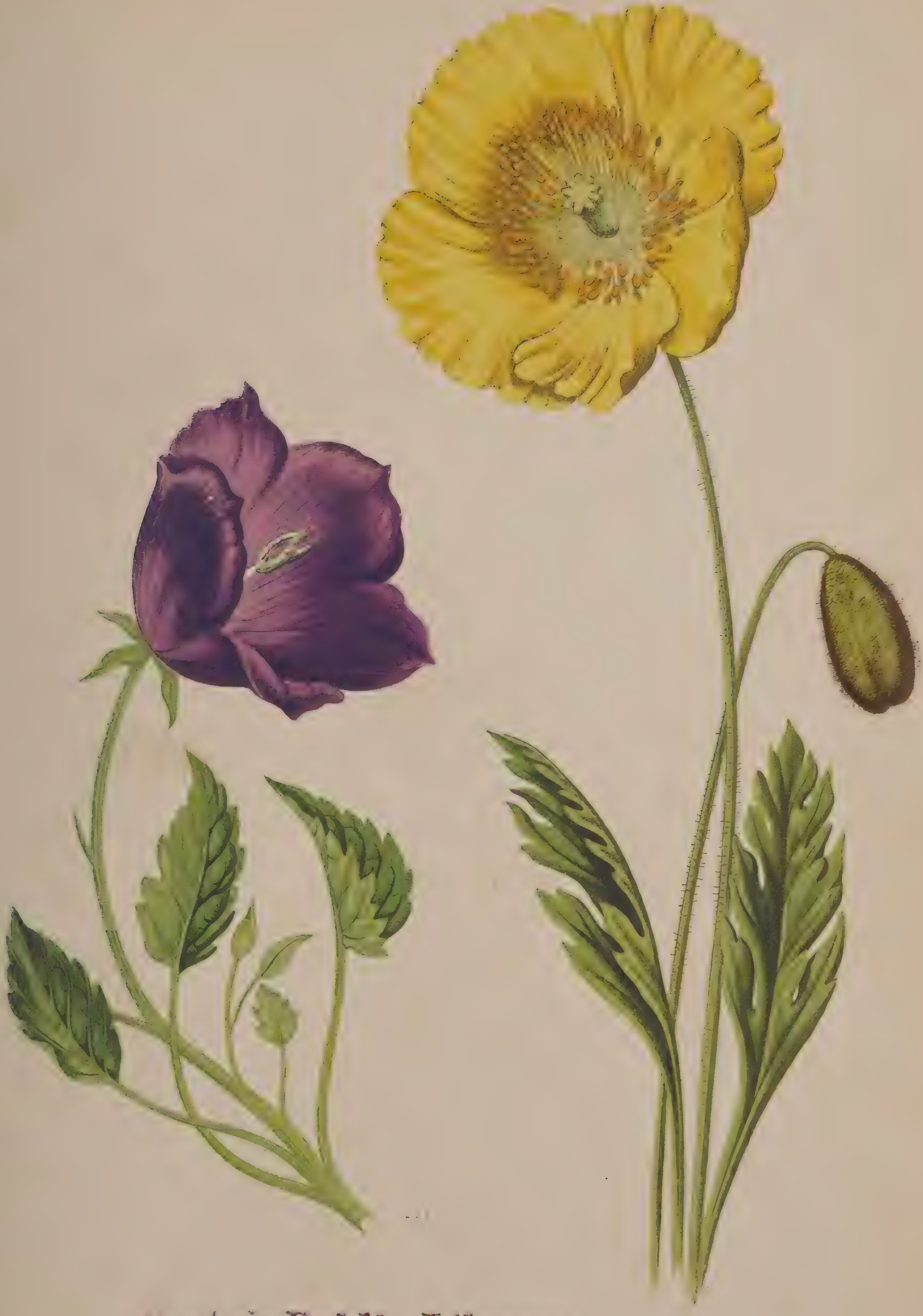
PLATE III.—FIG. I.

Campánula turbinàta. The vase-like Bell-flower.
Natural Order—Campanulaceæ. The Bell-flower Family.

There are a great many very beautiful species of Campánula which are easily cultivated in the borders of the flower garden.

C. turbinàta is a dwarf plant, with rigid, greyish green, toothed leaves, and producing its fine, large, cup-shaped, deep purple flowers, on branching erect stems, from six to nine inches in height, in June and July. It is a native of the mountains of Transylvania (where it grows in company with *Hepática angulòsa*), and it is quite hardy in this country, thriving extremely well either in the border or on rock-work when planted in deep rich loam.

The order *Campanulàceæ* consists of very beautiful herbaceous plants or undershrubs, with a milky though not poisonous juice, and almost always alternate, simple, deeply-divided leaves without stipules. They are chiefly natives of the north of Asia, Europe, and North America; very few being found in the hotter parts of the world. The flowers of these plants are single, usually blue or white, very rarely yellow, and they are produced in racemes, spikes, or panicles, or in heads. The corolla, which is bell-shaped and regular, consists of five petals, usually grown together, so as to form a monopetalous corolla with five lobes, each lobe having a conspicuous central nerve or vein. There are five or more stamens, which are generally distinct, and have broad bearded filaments bending over the ovary. The style is at first short, but it gradually elongates itself, and both it and the stigma are furnished with tufts of stiff hairs, which, as the style pushes itself through the stamens, brush off the pollen (for the anthers burst as soon as the corolla opens), and retain it till the stigma is in a proper state to receive it. The capsules have generally two, three, or five



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cells, each cell containing many seeds. In the genus Campánula, the type of the order, the capsule opens by little valves, which look as though cut with scissors.

PAPAVER NUDICAULE.

PLATE III.—FIG. II.

Papàver nudicaúle, Linnæus. The naked-stalked Yellow Poppy.

Natural Order.—Papaveraceæ. The Poppy Family.

Though this very pretty little Poppy is a native of Siberia (whence it was introduced in 1730), it was found some years ago by Professor Giesecké, of Dublin, growing wild among rocks and glens in the hills at Achilhead in the north-west of Ireland. The whole plant, except the corolla and stamens, is clothed with a tawny pubescence. It is a perennial, growing a foot or eighteen inches high, and flowering from June to August. It may be grown in the border or on rockwork, the soil most suitable for it being a sandy loam. It is readily increased by seed, and the plants can be raised annually. There are four varieties, three of which have bright yellow flowers like the species, the other, which is a hybrid, having red and orange flowers.

The generic name, *Papàver*, is from *papa*, pap (Celtic), or thick milk: the juice of the Poppy was formerly used in children's food, to make them sleep. Opium is obtained from the unripe capsules of *P. somníferum*.

The order *Papaveràceæ* consists of well-known herbaceous plants, small shrubs, or annuals, having a milky or coloured juice, and bearing showy but very fugitive flowers, which have a calyx of two or three sepals, a corolla of four or six petals, and an indefinite number of free stamens. All the plants possess a peculiar narcotic property. The Canadian Bloodwort, or Puccoon (*Sanguinària canadénsis*), a little North American plant with delicate white flowers, common in our gardens, has crimson juice, and its roots possess medicinal properties. From the seeds of the Mexican Poppy (*Argemòne mexicàna*), the Mexicans express oil. The pretty delicate little Violet Horned-Poppy (*Römèria hybrida*) is one of our very rare British plants being found wild only in Norfolk and Cambridgeshire, generally in corn-fields.

LINNÆA BOREALIS.

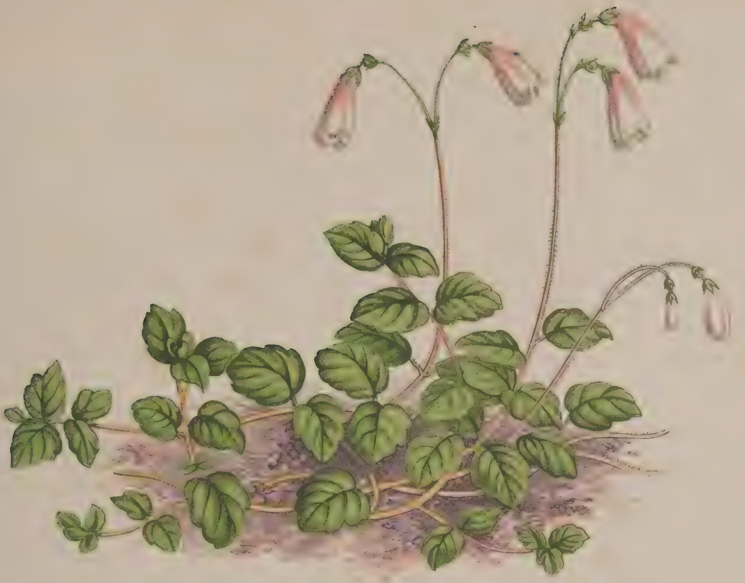
PLATE IV.—FIG. I.

Linnæa boreàlis, Gronovius. The Two-flowered Linnæa.
Natural Order—Caprifoliaceæ. The Honeysuckle Family.

This, which is the only known species of the genus, is a small, creeping, evergreen shrub, with opposite, roundish-oval, slightly toothed leaves, and very pretty, graceful, drooping, slightly fragrant, pale pink, twin flowers. This "little northern plant, long overlooked, depressed, abject, flowering early," was selected by Dr. J. F. Gronovius, with the concurrence of Linnæus, as a type of the early career of the great reformer of Natural History and the father of the modern Physical Sciences; and (being one of the native plants of the land which gave birth to Linnæus) as most fit to bear for all time his illustrious name.

The Linnæa is a native of high latitudes and alpine districts throughout the northern hemisphere. It has been found in Sweden, Lapland, Norway, Russia, Germany, Switzerland, Savoy, and Siberia; and in North America in several districts, but most plentifully in Canada. In Scotland it was first discovered in 1795: most generally it is found in woods, especially of fir, more rarely in open rocky and mossy situations, chiefly in the counties of Perth, Forfar, Inverness, and Aberdeen. In England I know of only one station where the plant has been found wild (to which I have paid many interesting visits), and that is in a plantation of Scotch firs on the estate of Sir Walter Calverley Trevelyan, Bart., in Northumberland, where it was first discovered by the late Mrs. Alexander Wadham Wyndham, daughter of the late Sir John Trevelyan, Bart.

This very pretty, interesting, graceful little plant, which flowers in May and June, should be grown in moist sandy peat in a somewhat shady situation, and it is easily increased by separating the creeping stems when rooted. It is very suitable for growing on rockwork as a trailing plant; but it may also be most successfully grown in large pots



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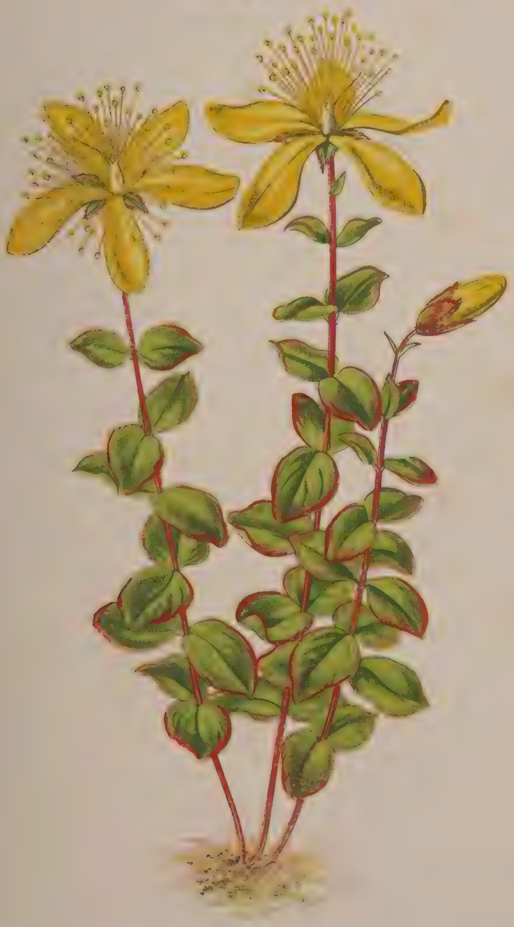
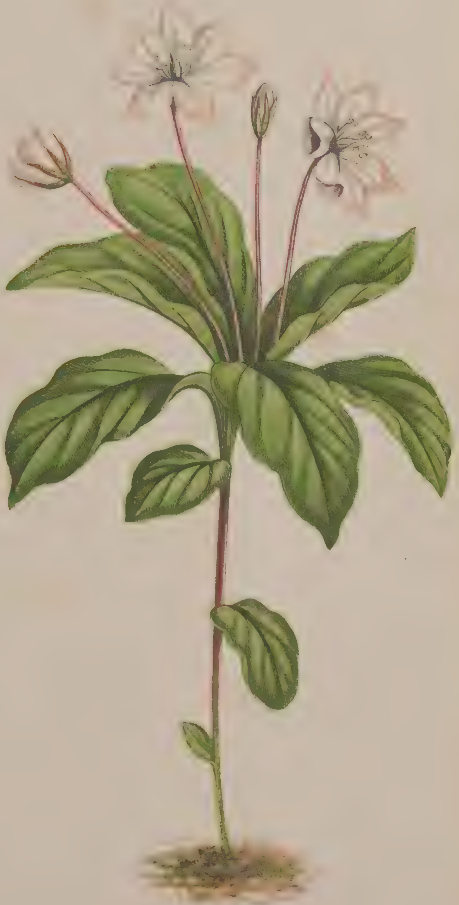




LINNÆA BOREALIS.

HYPERICUM NUMMULARIUM.

TRIENTALIS EUROPÆA.

IV

or pans filled with moist peaty earth and grit, either indoors in the fernery, or in the open air, in which latter case, the pots or pans should stand in water.

The American plant is usually stronger than the European one, and is by some regarded as a variety, and called *L. b. americàna.*

The Linnæa belongs to the Honeysuckle Family, which consists of trees, shrubs, or herbaceous plants, with opposite leaves, which are without stipules. The flowers of the plants of this order are most usually produced in terminal heads, corymbs, or panicles, but sometimes they are axillary. The calyx is combined with the ovary, with an entire or toothed border, sometimes scarcely prominent. The monopetalous corolla is regular or somewhat irregular, five or rarely four-lobed, with the lobes overlapping each other in the bud. The stamens are inserted in the tube of the corolla, and alternating with its lobes, either of the same number as the lobes or one less, or rarely double the number. The ovary is inferior, with from three to five cells, and there are as many stigmas, which are either sessile or on short styles, or united on the summit of a single style. The fruit is generally succulent, with from one to five cells. The seeds are either solitary or few in each cell, with a fleshy albumen.—Besides the well-known Honeysuckles, as other ornamental flowering plants of the order, frequently found in our gardens, the following may be mentioned:—the Snowberry (*Symphoricárpos*), the striking *Leycestèria,* and the beautiful *Weigèla.*

HYPERICUM NUMMULARIUM.

PLATE IV.—FIG. II.

Hypéricum nummulàrium. The Moneywort-leaved St. John's Wort.

Natural Order—HYPERICACEÆ. The St. John's Wort Family.

THE species contained in the extensive genus *Hypéricum* (many of which have very showy flowers) are either herbaceous plants or small shrubs, and they are natives of various parts of the world, growing on mountains and in valleys, in marshes and on dry plains, in meadows and on heaths. Though many of them are quite hardy in this country, there are some which require a greenhouse. The leaves are opposite and either sessile or with very short foot-stalks, and they are usually full of transparent dots, which are cells containing a yellow resinous juice, resembling gamboge in its medicinal properties, and having a disagreeable smell. There are, indeed, two kinds of the glandular dots: the pellucid ones (already described), which can easily be seen by holding up the leaves to the light, and the black ones found usually on the under side of the leaves round the edge, but sometimes also on the flowers. The flowers are variously disposed, but in nearly all the species they are yellow.

The name of *Hypéricum* is as old as the time of Dioscorides; but its origin and meaning are uncertain. Some derive it from the Greek words *huper* under, and *eikon*, an image; and suppose it to signify that the upper part of the flower represents a figure. Others state that *huper* signifies through, and that the name alludes to the pellucid dots in the leaves, which form small lenses, through which, when held up to the light, images might be seen. The French name of the plant, *Mille Pertuis*, a thousand pores, is evidently derived from the same source. The English name, St. John's Wort, and the German one, *Johanniskraut*, are taken from the country people, both in England and Germany, being formerly in the habit of gathering one species of St. John's Wort (*H. perforàtum*) on St. John's Day, to use it to protect themselves from evil spirits. This plant, with some others, was employed to make what was called John's Fire, which was supposed to be a security, for those who kindled it, against witchcraft and all attacks of demons. For this reason, also, the Hypéricum received the name of *Fuga Dœmonum.*

H. nummulàrium is a deciduous species, a native of the south of Europe, whence it was introduced in 1823. It has a trailing habit, growing to the height of about a foot, and producing its pretty bright yellow flowers in June and July. It should be grown in a mixture of peaty loam, sand, and limestone; and it may easily be increased by division.

I am indebted to Messrs. Backhouse and Son, of York, for kindly forwarding the plant from which the figure in our plate is taken.

In the plants included in the order *Hypericàceæ* the leaves are simple, opposite, exstipulate, deciduous, or evergreen, and copiously dotted with immersed, pellucid, resinous glands; the flowers are terminal or axillary, and generally yellow; the sap is yellow and resinous. The order is chiefly distinguished from those most nearly allied to it by the stamens, which, in the flowers of nearly all the plants, are numerous and arranged in three or five clusters or bundles.

TRIENTALIS EUROPÆA.

PLATE IV.—FIG. III.

Trientàlis europæ̀a, Linnæus. The European Chickweed Wintergreen.
Natural Order—Primulaceæ. The Primrose Family.

This is one of our rare British plants. I have frequently seen it growing in shady woods and on turfy heaths in Northumberland, where it is comparatively rare. In the Highlands of Scotland it is more common. It is not found in Ireland. It is a most elegant little creeping-rooted perennial, with erect slender stems from three to six inches in height, bearing at the top a whorl of from four to seven leaves, from the axils of which one or more lovely pure white or pink-tipped starry little flowers arise on slender simple peduncles. The parts of fructification, though frequently seven, vary from six to nine, but are always accordant with each other.

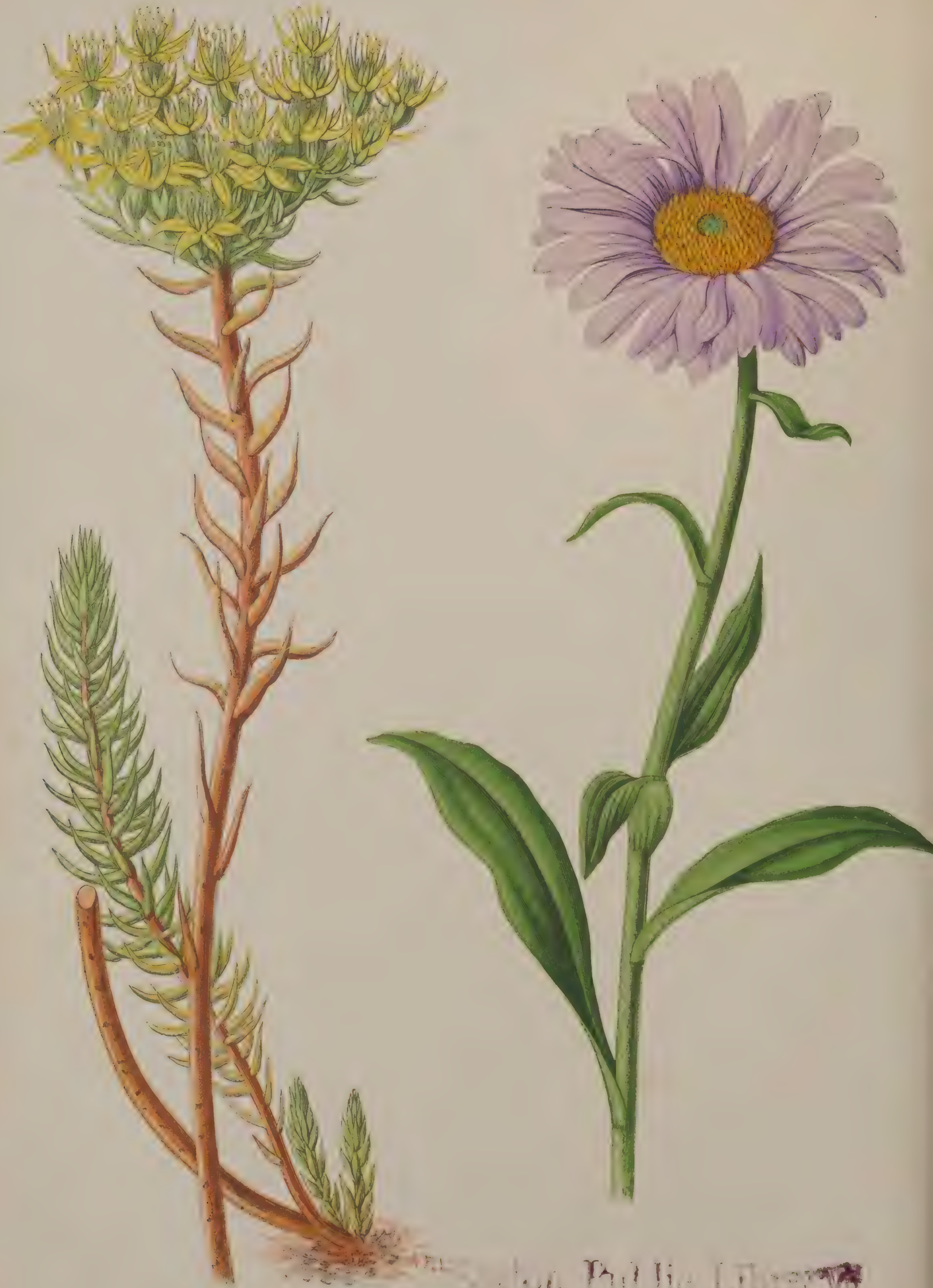
This little British plant is interesting as being the only representative in this country of the Linnæan class *Heptándria*, which is the seventh class of the Linnæan System of Botany, and includes such plants as have seven stamens. But even in *Trientàlis* the stamens vary, the number being very inconstant, and hence the other parts of fructification vary likewise, in accordance with a law of equal development well known to the vegetable physiologist. A similar anomaly occurs in exotic genera of the same class; and the number seven, which is of rare occurrence in the organs of plants, may in all instances be regarded either as the consequence of abortion of the units of a greater normal number, or of an effort to double the series of a smaller number.

This species of Trientàlis flowers in June, and is readily increased by dividing the creeping roots. It should be grown in a mixture of light leaf-mould and sand in a moist shady situation. For rockwork it is very suitable, along with the *Linnæ̀a*, the several species of *Pyrola*, and the three species of *Pinguícula*.

There is an American species (*T. americàna*), which was introduced in 1816, and which has spear-shaped leaves and produces its flowers in July and August; but in other respects the plant very closely resembles *T. europæa*.

The generic name of *Trientàlis* is from *triens*, one-third, in allusion, it is supposed, to the humble stature of the plant.

The Trientàlis is included in the order *Primulàceæ* (the Primrose being the type), which contains many very beautiful plants: they are herbaceous, with undivided leaves (except when under water), and regular flowers; the latter being produced either in the axils of the leaves or in terminal racemes or umbels. The calyx has usually five sepals or divisions; sometimes, however, there may be either four or six, or even seven of these divisions or teeth. The corolla is regular, and more or less deeply divided into as many lobes or teeth as there are divisions of the calyx, or rarely wanting. The stamens are equal in number to the lobes of the corolla, and inserted in its tube opposite the centre of the lobes, or, when the corolla is wanting, alternating with the lobes of the calyx. There is a single style with a capitate (resembling the head on a pin) stigma. The capsule is single and one-celled, containing several seeds. The plants of this family inhabit chiefly the northern hemisphere, and especially high mountains, being often found at very great elevations.



SEDUM REFLEXUM. ASTER ALPINUS.

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SEDUM REFLEXUM.

PLATE V.—FIG. I.

Sèdum refléxum, Smith. The reflexed yellow Stonecrop.
Natural Order—Crassulaceæ.* The Crassula Family.

Nearly all the species contained in the genus *Sèdum* are low-growing succulent herbaceous plants, with alternate leaves, and rather pretty red, white, or yellow flowers. They are natives chiefly of the northern temperate zone, where, with a structure capable of bearing the extremes of heat and cold, they flourish in the most exposed situations. Few plants can be so easily cultivated, and few are better adapted for the decoration of rockwork, or to break the uniformity of the walls surrounding a suburban garden. If the plants are grown in the borders of the flower garden, the soil should be very light and sandy or gravelly, or it should be mixed with loam and brick rubbish. When they are planted on rockwork, well drained fissures fully exposed to the sun will be found most suitable for them.

The generic name of *Sèdum* is from *sedere*, to sit, in allusion to the plants growing upon the bare rock, and looking as if sitting upon it.

S. refléxum is a British perennial species, found not unfrequently on walls and thatched roofs, and flowering in July. The stems and leaves are smooth. The flowering branches grow erect, from six inches to a foot in height, terminating in a compact cyme of bright yellow flowers, the parts of which vary very frequently from the normal number (five sepals, five petals, and ten stamens); the segments of the calyx, the petals, and the germens being six or seven, and the stamens twelve or more. Similar variations occur in the flowers of three other

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* The character of the order *Crassulàceæ* is given very briefly in page 6.

British species of Stonecrop (which closely resemble that under notice in habit), namely, *S. glaúcum, S. rupéstre,* and *S. Forsteriànum.*

The figure in our plate is taken from a plant kindly forwarded by Messrs. Backhouse and Son, of York.

ASTER ALPINUS.

PLATE V.—FIG. II.

Aster alpìnus, Linnæus. The Alpine Aster, or Starwort.
Natural Order—Compositæ. The Composite Family.

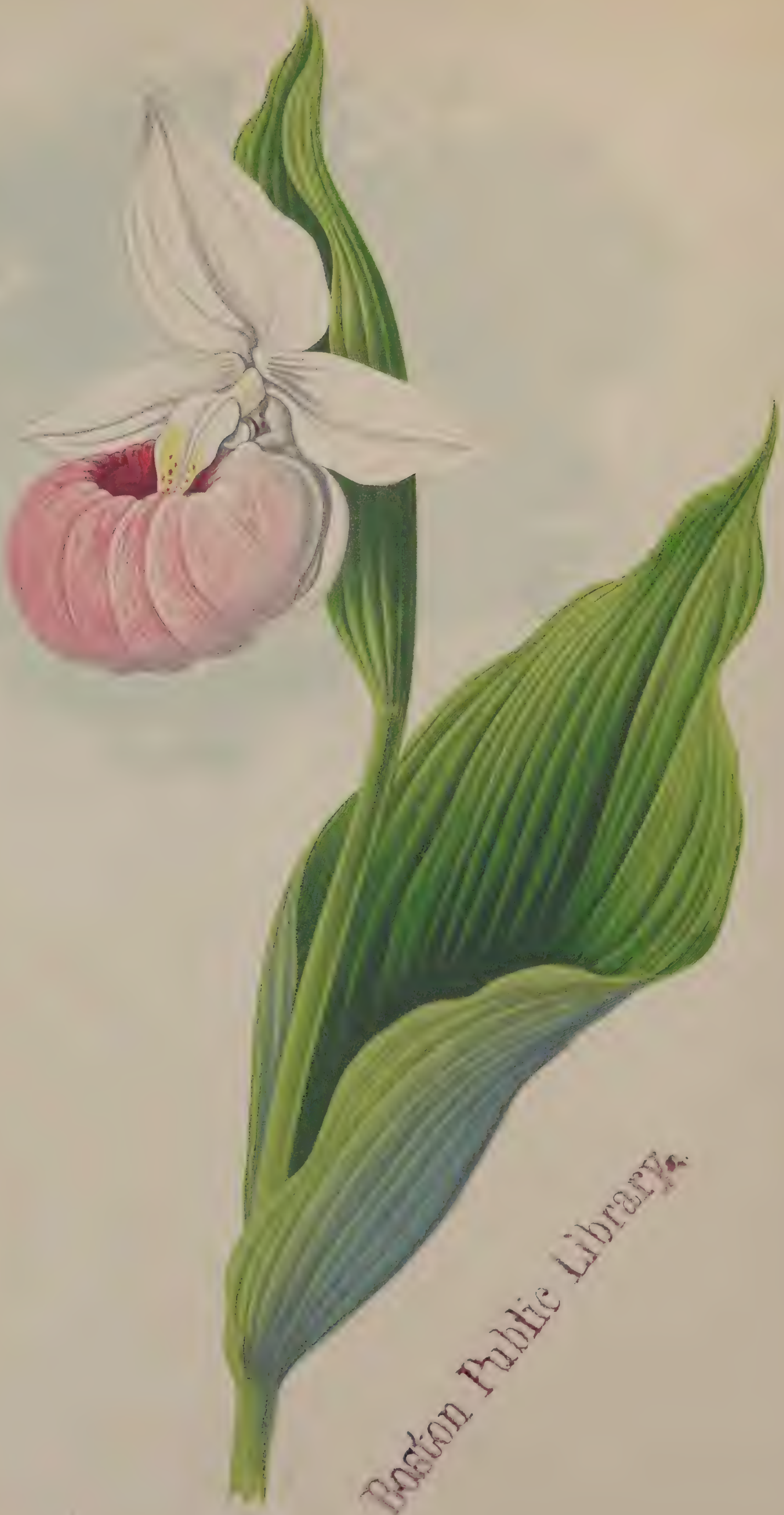
The genus *Aster* is a very extensive one, and some of the species contained in it are very ornamental, and well deserving of cultivation. The perennial species are well known as Michaelmas Daisies; while the *A. chinénsis* is that invaluable border annual the China Aster, of which there are now so many very beautiful varieties, and which give a lively appearance to the flower garden in the autumn.

The generic name is from *aster,* a star, in allusion to the flowers resembling little stars, on account of the numerous rays of their circumference.

The *A. alpìnus* is a very pretty little plant, which only grows a few inches high on its native mountains—the Alps of Austria and Switzerland (whence it was introduced in 1658)—and even in gardens does, not exceed the height of eight or ten inches. The leaves are hairy and sometimes velvety. The flowers are produced singly, and are large and showy, the disk (the centre) being yellow, and the ray of a purplish lilac. The most suitable soil for this plant is one composed of moist loam and grit. It begins to flower in May or June, continuing in blossom a month or six weeks. It is a very suitable plant for rock-work; and it is also well adapted for planting a bed in a geometrical flower garden from its dwarf habit, and the large size and showy colours of the flowers. There is a variety with white flowers. Both the species and the variety are easily increased by division.

The figure in our plate is from a plant obligingly forwarded by Messrs. Backhouse and Son, of York.

The order to which the Aster belongs *(Compósitæ)* is one of the largest of all the Natural Orders, containing eight or nine thousand species, which are natives of all parts of the world. Some of them are herbaceous plants and others are shrubs, with alternate or opposite leaves (without stipules), which are simple in some, and in others much divided. The flowers of all the plants are compound, that is, composed of a number of florets, united by a common receptacle, and forming a head, which is surrounded by a calyx-like involucre, the whole mass having the appearance of a single flower. Each floret, however, has a calyx, the tubular part of which is rarely sufficiently distinct to be perceptible, but the limb is generally cut into long feathery segments, called pappus; and this pappus is always on the outside of the corolla, plainly indicating its connection with the calyx. In most of the plants the corolla is either ligulate (strap-shaped), as in the floret of the wild Lettuce *(Lactùca viròsa)*, or tubular, as in the floret of the Cotton Thistle *(Onopórdum Acánthium)*. All the British Compósitæ have their florets either of one of these kinds, or of the two combined, that is, with the florets of the disk (the centre of the flower) tubular, and those of the ray ligulate; but some foreign genera of the order (which are almost entirely American) have florets with two equal lips, cut into three or four lobes, and are called bilabiate, as, for example, in the florets of *Mutísia latifòlia*. There are five stamens, the filaments of which are distinct, but the anthers grow together so as to form a kind of cylinder, through which passes the style, ending in a two-lobed stigma. The ovary of each floret contains only one seed; and the fruit, which is called an achenium (that is, dry and bony), retains the pappus when ripe, and falls without opening. To facilitate the study of so extensive an order, it has been found desirable to divide it into tribes, and the following four may be regarded as the most simple and the most easily understood:—1. *Cichoràceæ*, 2. *Cynarocéphala*, 3. *Corymbíferæ*, and 4. *Labiatiflòræ*. The plants included in the first tribe *(Cichoràceæ)* have ligulate florets, and a milky, narcotic juice; and they bear more or less resemblance to the Common Succory *(Cichòrium I'ntybus)*, the fleshy roots of which, when roasted, furnish the chicory with which coffee is adulterated. Other well-known plants belonging to this tribe are the Endive, the Lettuce, and the Dandelion. The second tribe *(Cynarocéphalæ)* contains plants having tubular florets, and a watery tonic juice; and they all resemble more or less the common Artichoke *(Cy'nara Scólymus)*. The third tribe *(Corymbíferæ)* consists of plants having one portion of the florets tubular and the other ligulate; a watery juice, in some bitter and tonic, and in others acrid; and the seeds of some of the species yield oil. The Daisy is one of the plants included in this tribe: the white florets (forming what is called the ray) of this well-known little plant are all ligulate, and the yellow florets (forming the disk) are tubular. The Aster, the Dáhlia, and other well-known plants also belong to this tribe. In the plants of the fourth tribe *(Labiatiflòræ)*, the florets are bilabiate. These are not so numerous as those included in the other tribes, and they are not so generally known. The *Mutísia latifòlia* may be mentioned as an example: in it the florets of the ray are narrow and spreading in the expanded flower, while those of the disk are shorter, erect, divided into two lips, which curl back, and the lower one of which is again divided into two segments.



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CYPRIPEDIUM SPECTABILE.

VI

CYPRIPEDIUM SPECTABILE.

PLATE VI.

Cypripèdium spectábile, SWARTZ. The remarkable white-petalled Lady's Slipper.
Natural Order—ORCHIDACEÆ.* The Orchid Family.

OF the hardy North American species of Cypripèdium (and there are several), that now under notice is by far the most striking and beautiful. The flowers, which are produced in June and July on leafy stems from eighteen inches to three feet in height, are large and very showy, the petals being white, and the slipper-like labellum or lip of a lovely rose-colour. When the plant was first introduced to the Royal Garden at Kew, about the year 1770, it was called *C. álbum*, in allusion to the whiteness of its petals (with which the nectary must not be confounded), but the name by which it is now generally known is *C. spectábile*. It is a native of various parts of North America, where it grows in woods, in meadows, and in peat bogs. In this country the plant is perfectly hardy, and I have seen it succeed extremely well in the open border of a flower garden in the north of England. It may also be successfully grown in pots, provided these are large and deep enough to allow plenty of room for the roots; but it will not succeed in the shallow pans in which some orchids are not unfrequently grown. When planted in the open garden, a moist shady situation among rocks and stones appears to suit it best: the soil should be one composed of loam, peat, and grit.

This very beautiful hardy orchid would appear to have been known to, and cultivated by, the celebrated Philip Miller (at Chelsea), even before it was introduced to the garden at Kew. This author, in his "Gardeners' Dictionary," says, "that all the sorts of Cypripèdium are with difficulty preserved and propagated in gardens;" and he recommends that they should be "planted in a loamy soil, and in a situation where they may have the morning sun only." And, he adds, "the roots should be seldom removed, for transplanting them prevents their flowering, which usually takes place in June."

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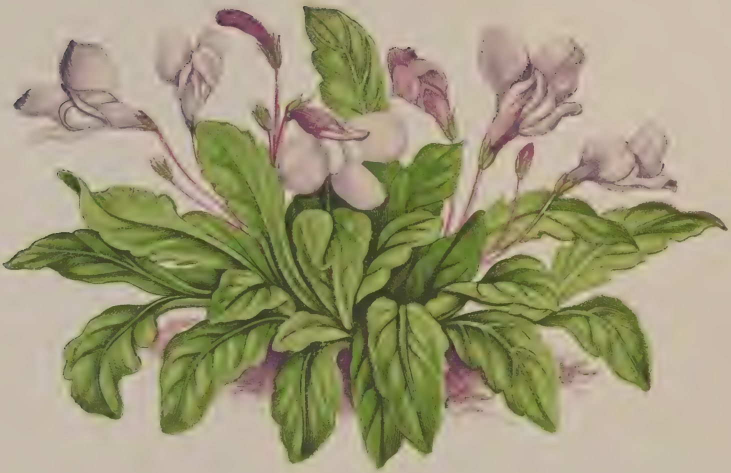
* The character of the order *Orchidàceæ* is given in page 3.

I have to express my acknowledgments to Messrs. Backhouse and Son, of York, for kindly forwarding the plant from which the figure in plate VI. is taken.



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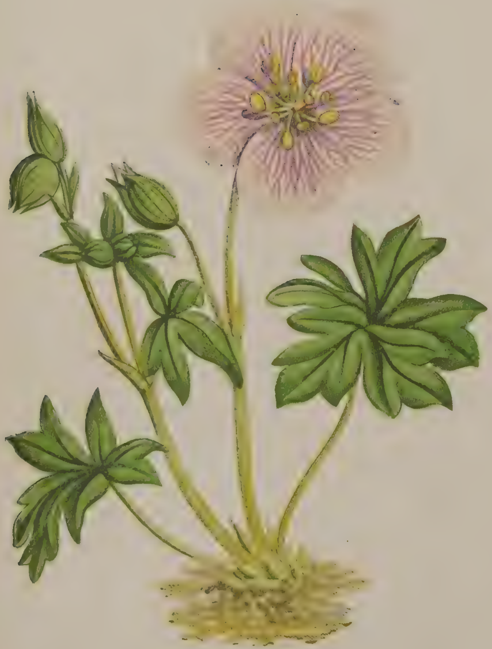

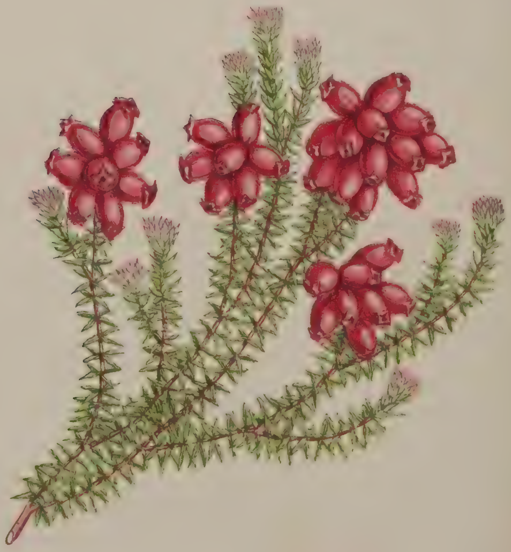

MAZUS PUMILIS.

GERANIUM CINEREUM.

ERICA MACKIEANA.

VII

MAZUS PUMILIO.

PLATE VII.—FIG. I.

Màzus pumílio, ROBERT BROWN. The dwarf Mazus.
Natural Order—SCROPHULARIACEÆ.* The Figwort Family.

THIS is an interesting though not a very showy little plant, creeping under ground, and quickly forming dense tufts, which, however, only attain the height of two or three inches. It is a native of Van Diemen's Land, whence it was introduced in 1823. The flowers, which appear in June and July, are of a pale purple or violet, with the centre white; and they are produced on stalks so short as scarcely to rise above the leaves. The leaves are nearly entire and obtuse, and are remarkable for having a tendency to lie flat on the surface of the soil. The plant may be easily grown in pots, in cold frames, or in the open air; and it is very suitable for open sunny situations on rock-work. It may be readily increased by division. The soil in which it thrives best is one composed of rich loam and sand.

The generic name is from *Mazos*, a teat, on account of the little tubercles or protuberances which close the mouth of the corolla.

The figure in our plate is taken from a plant kindly forwarded by Messrs. Backhouse and Son, of York.

GERANIUM CINEREUM.

PLATE VII.—FIG. II.

Geràníum cinèreum, CAVANILLES. The Grey Geranium, or Crane's Bill.
Natural Order—GERANIACEÆ. The Geranium Family.

THE very beautiful greenhouse plants usually called Geraniums are now removed to the genus *Pelargònium*, chiefly on account of a very trifling difference in the calyx. Other differences are scarcely worth naming, except that in the Geraniums the petals are all equal, while in *Pelargònium* they are unequal, the upper two being larger than the rest. The species of true Geranium are mostly hardy or greenhouse perennials. Some of the British species are very beautiful, and well deserve to be cultivated in gardens, where, indeed, they are frequently found.

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* A description of the order *Scrophulariàceæ* is given in page 4.

G. cinèreum (sometimes called *G. vàrium*) is a very beautiful dwarf species, growing about six inches high, a native of the Pyrenees, with five- or seven-parted slightly pubescent greyish leaves, and large delicate pale pinkish flowers, prettily veined with purple or violet, which are produced in abundance from June to August. The plant is very suitable either for rock-work or for forming tufts in a mixed border, and it will also succeed in pots or pans in sandy loam. It may be easily raised from seed, which it produces in abundance.

The generic name is from *Geranos*, a crane, the capsule and its beak resembling the head of that bird.

Messrs. Backhouse and Son, of York, were so good as to forward the plant from which the figure in our plate was taken.

The Geranium family (*Geraniàceæ*) consists chiefly of annuals or perennials (though some of the exotic species may be regarded as low shrubs), with opposite or rarely alternate leaves, which are generally more or less toothed, divided, or compound, and furnished with stipules. In the principal British genera of the order the flowers are regular, but in some of the exotic ones they are irregular. In the regular flowers the calyx has five sepals, overlapping in the bud; the corolla has five petals, which are twisted in the bud; and there are from five to ten stamens, which are often united at the base: the ovary is five-lobed and five-celled, with one or several seeds in each cell, all attached to the central axis; there are five styles; and the fruit is five-lobed, the carpels opening or partially falling off when ripe, leaving a central persistent axis. These characters are, however, much modified in the genera having irregular flowers.—The plants of the order are found in various parts of the globe, but most generally in the temperate regions of the northern hemisphere, and more particularly in south-western Africa. Three of the best-known genera of the order are, *Geranium* (the Crane's Bill), *Eròdium* (the Heron's Bill), and *Pelargònium* (the Stork's Bill).

ERICA MACKAIANA.

PLATE VII.—FIG. III.

Erìca Mackaiàna, Babington. Dr. Mackay's Cross-leaved Heath.
Natural Order—Ericaceæ. The Heath Family.

The genus Erìca is a very large one, containing about four hundred true species (most of which are natives of the Cape of Good Hope), besides the very large number of hybrids and varieties raised in our gardens. Only a very few of the species are hardy in this country, and most of these are British plants of great beauty.

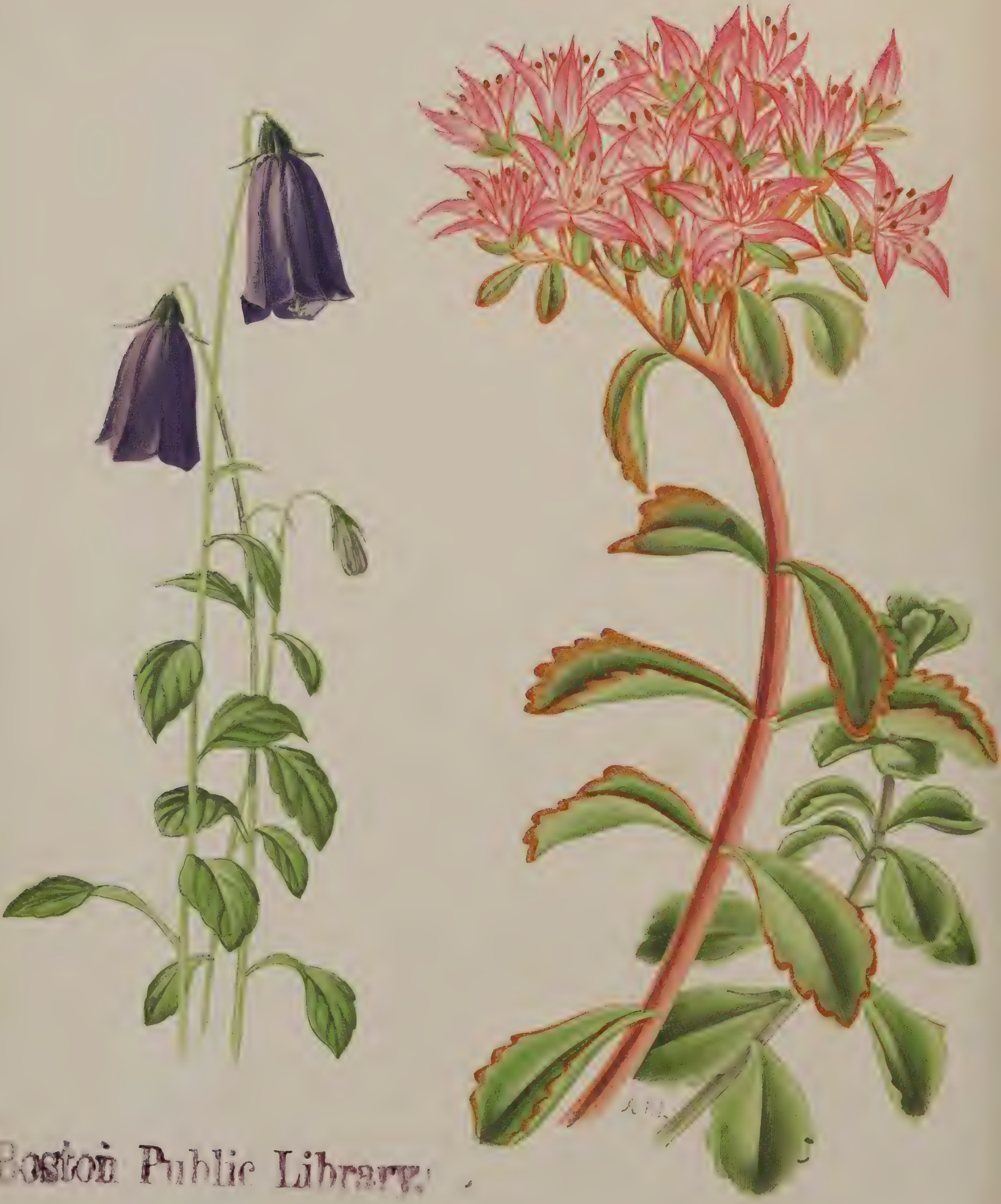
As to the origin of the generic name, it may be stated that the Erica of Pliny is altered from the *Ereikē* of Theophrastus, which is derived from *Ereikō,* to break, in allusion to the brittle branches of the plant; and, it is said, also to the quality supposed to be possessed by some of the species of breaking the stone in the bladder.

The *E. Mackaiàna,* from Cunnemara in Ireland, and also from the Asturias, was long considered as a distinct species, but it is now regarded as only a very marked variety of *E. Tétralix,* with shorter and broader leaves of a darker green. By some it is thought that it may probably be a natural hybrid between *E. ciliàris* and *E. Tétralix* (having the leaves and calyx of the former, and the flowers of the latter species), and called *E. Tétralix δ Mackaiàna.* It was first discovered by the late Dr. J. T. Mackay (author of the "Flora Hibernica"), in compliment to whom it was named by Professor Babington. It is a dwarf evergreen plant, growing to the height of six inches or a foot, and producing its pretty pink flowers in terminal clusters or heads from June to August. It is very suitable for rockwork, and should be planted in sandy peat. Easily increased by layers or by division.

The *Erìca Tétralix* is the badge of the Clan Macdonald, and it is the species most commonly used for making besoms.

The Heath family (*Ericàceæ*) consists of shrubs (sometimes very low and creeping) or small trees, generally evergreen, with alternate, whorled, or opposite simple rigid leaves without stipules; and usually drooping flowers, which are either solitary or in small clusters or racemes in the axils of the leaves, or disposed in short terminal racemes. The calyx has four or five divisions, either free, or with a tube adhering to the ovary. The corolla is either inferior or superior, generally ovoid or globular, but sometimes small and campanulate with four or five lobes, or with four or five nearly distinct petals. The stamens are twice as many or rarely of the same number as the lobes of the corolla, and, though inserted within the corolla, they are distinct from it: the anthers open at the top with two pores, or with transverse valves. The ovary is surrounded at the base by a disk, or secreting scales, and has generally as many cells as the lobes of the corolla, rarely apparently twice as many. There is a single style, which is straight; and the stigma is undivided, or toothed, or three cleft, with an indication of an indusium. The fruit is a many-celled capsule or berry, with one or several seeds in each cell: the seeds are very small, and have a fleshy albumen.

The plants in this order (which is a large one) are found in most parts of the world except Australia, more particularly in the temperate and colder regions: they are also met with in the hilly districts within the tropics. Besides the Heath, other well known and beautiful plants of the order are: *Andrómeda, Vaccínium* (the Cranberry), *Gaulthèria, A'rbutus, Arctostáphylos, Py'rola* (the Wintergreen), *Kálmia, Rhododéndron, Rhodòra, Azàlea,* and *Lèdum.*



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CAMPANULA PULLA. SEDUM PALLIDUM ROSEUM.

VIII

CAMPANULA PULLA.

PLATE VIII.—FIG. I.

Campánula púlla, LINNÆUS. The dark violet-coloured Campanula, or Bell-flower.
Natural Order—CAMPANULACEÆ.* The Bell-flower Family.

THIS species of Campánula, though introduced from the Austrian Alps so long ago as 1779, is still a rare Alpine, remarkable for the extreme delicacy and beauty of its flowers, which, in form, resemble a little bell, are of a dark violet-colour, and appear in July and August. It is a hardy dwarf perennial, growing from three to six inches high in sandy peat, and very suitable for planting on rock-work in company with other compact low-growing Alpines. It may also be successfully grown in pots or pans in sandy loam and grit. It may be increased either by division of the root or by seeds. In one of the square pans in which many Alpine plants were exhibited (with good effect) at one of the *fêtes* of the Royal Horticultural Society at South Kensington two or three years ago (if I remember correctly, by Messrs. E. G. Henderson and Co.) this Campánula would appear to advantage.

The name of *C. alpìna* was given to this plant by Bauhin, but it is quite distinct from the very beautiful species so named by Jacquin. Two popular names, besides that already given at the beginning of this description, by which *C. púlla* is known, are the Austrian Bell-flower, and the Russet Bell-flower.

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* For a description of the order *Campanulàceæ* see page 8.

SEDUM PALLIDUM ROSEUM.

PLATE VIII.—FIG. II.

Sèdum pállidum ròseum, Hort. The Rosy Stonecrop.
Natural Order—Crassulaceæ.* The Crassula Family.

The *Sèdum pállidum* of Marschall von Bieberstein (a Russian botanist of great repute) is a pretty dwarf annual with pale red flowers (which appear in June and July), a native of the Caucasus, whence it was introduced in 1817; growing well in sandy loam, and readily increased by seed. The variety (*S. pállidum ròseum*) in plate viii. (for an opportunity of figuring which I have to express my acknowledgments to Messrs. Backhouse and Son, of York), has bright rose-coloured flowers, and reddish brown stems. The serrated margins of the leaves are also of a reddish brown.

In addition to what has been already stated in p. 15, as to the most suitable situations for planting the different species of Stonecrop, I may further remark that many of them are well adapted for being grown in pots and vases to be placed in balconies, on steps, or on terrace gardens.

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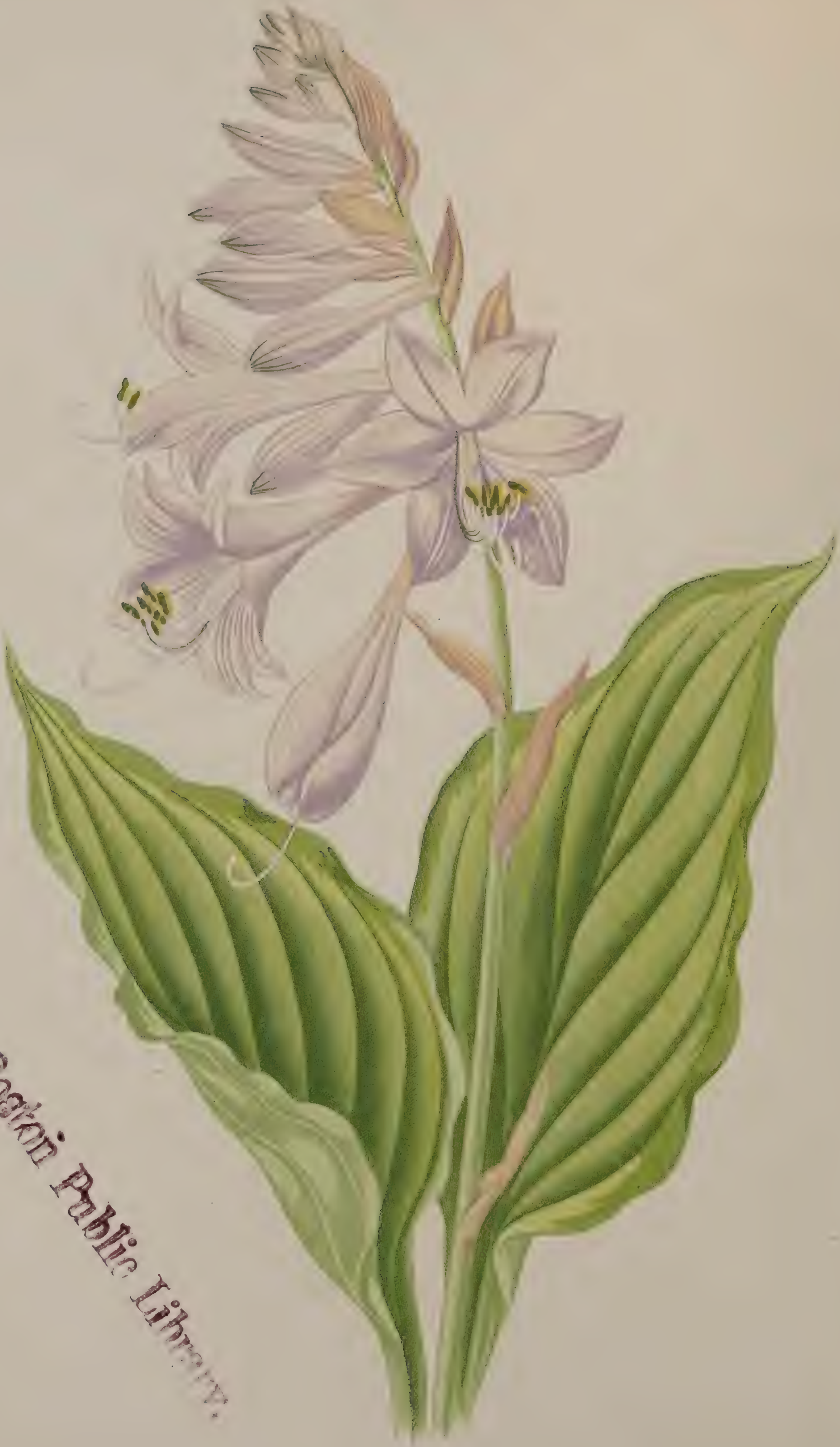
* The character of the order *Crassulàceæ* is given in p. 6.



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FUNKIA UNDULATA β. VARIEGATA.

IX

FUNKIA UNDULATA β VARIEGATA.

PLATE IX.

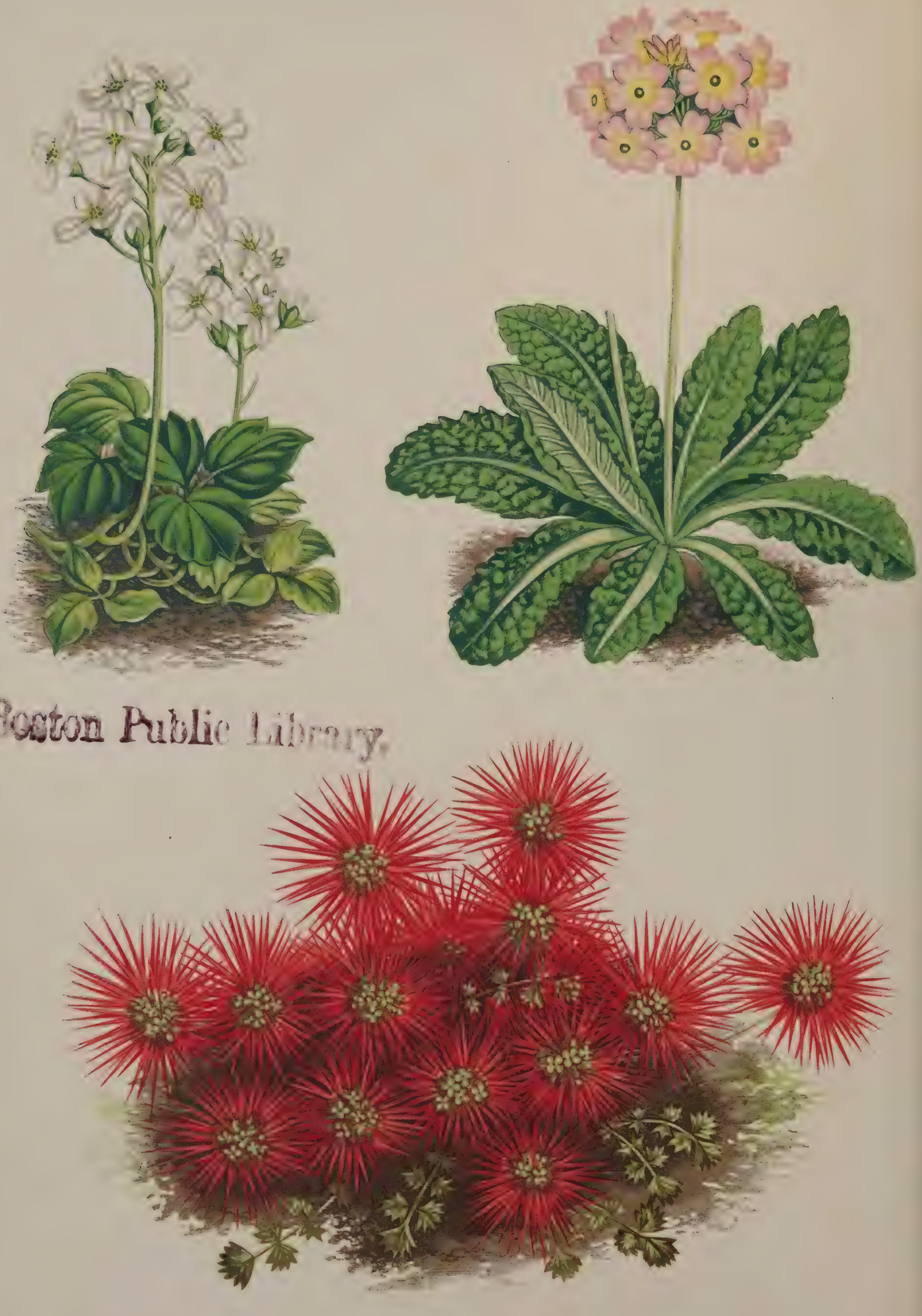
Fúnkia undulàta β variegàta, Hort. The variegated waved-leaved Funkia.
Natural Order—Hemerocallidaceæ. The Day Lily Family.

The genus Fúnkia contains the species with lilac, purple, and white flowers which were formerly included in the genus *Hemerocállis* (the Day Lily). All the species are ornamental Japanese perennial plants, requiring a warm situation in the flower-garden to ensure their flowering well. The name was given to the genus by Sprengel in honour of Henry Funk, a Prussian apothecary, who discovered several new mosses, and published some illustrations of the Cryptogamous plants of Germany.

The *F. undulàta*, which may be called the Day Lily of Japan (whence it was introduced in 1834), grows rather more than a foot high, and produces its flowers (which are of an extremely delicate lilac colour) in spikes, in August. The variety figured in our plate (*F. undulàta β variegàta*) has rather broad leaves, variegated with longitudinal yellow bands. Both the species and the variety are very suitable either for being planted in a mixed border, or for being grown in pots or vases. The soil most suitable for these plants is a sandy loam; and they are easily increased by dividing the roots.

In the plants included in the order to which the *Fúnkia* belongs (*Hemerocallidàceæ*, from *Hemerocállis*, the Day Lily), the flower (usually called the perianth) has the calyx and corolla confounded, and cohering into a tube. There are six stamens, inserted in the segments of the perianth, with the anthers opening inwards. The ovary is superior, three-celled, and many-seeded. There is one style, and a simple stigma. The fruit, which is succulent, is three-celled. The seeds are packed one upon another in one or two rows, the seed-coats being soft and pale.

The order contains many fine showy plants, bearing their flowers (which are white, yellow, red, blue, or lilac) in umbels, spikes, or racemes. They are mostly inhabitants of temperate zones, and, with the exception of the Aloe, are not of any great utility. The Aloe is besides remarkable among Monocotyledons (plants with only one seed-leaf) for its fleshy leaves, in which, and its woody stem, it offers a striking deviation from the usual structure of these plants. In addition to *Fúnkia, Hemerocállis,* and *A'loe,* other well-known genera of the order are, *Agapánthus, Poliánthes* (the Tuberose—remarkable for its delightful fragrance), *Blandfórdia, Trítoma* (one species of which, *T. Uvària,* is now so frequently seen, producing a striking effect during the autumnal months, in the public parks and gardens in and around London and elsewhere), and *Velthèimia.*



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[illegible] [illegible]. PRIMULA [illegible].

ACÆNA MICROPHYLLA.

CARDAMINE TRIFOLIA.

PLATE X.—FIG. I.

Cardámine trifòlia, Linnæus. The three-leaved Bitter Cress, or Lady's Smock.
Natural Order—Cruciferæ.* The Cruciferous Family.

Of the numerous species contained in the genus *Cardámine*, perhaps some of the prettiest are British plants, very abundant in the open country, but rarely cultivated in gardens. The prettiest of these British species are, *C. bellidifòlia* (the Daisy-leaved Lady's Smock), which scarcely rises higher than a tuft of moss, has daisy-like leaves, and produces an abundance of lively-looking white flowers; and the common Lady's Smock (*C. praténsis*), which takes its English name from the flowers being produced in such abundance in the meadows as to give them the appearance of a bleaching ground, or of being covered with clothes from the wash, laid on the grass to dry. This last species is also sometimes called Cuckoo-flower, from its being in flower when the cuckoos are heard.

As one of the smaller alpine plants, *C. trifòlia* is worthy of being included in collections. It has been found growing freely in many parts of Europe, especially in Lapland, Austria, and Switzerland. From the last-named country it was introduced in 1629, and Parkinson, in his "Paradise of Pleasant Flowers," gives the following account of its introduction:—"It was sent me by my especial good friend John Tradescante, who brought it among other dainty plants from beyond the seas, and imparted thereof a root to me." The species is a hardy dwarf perennial, with the dark green trefoil-like leaves growing thickly together and forming tufts, and the flowering stems, which rarely rise above the height of six inches, producing on their summits numerous white flowers waved on their edges. Though the flowers, which appear in March and April, are almost always perfectly white, both Parkinson and Haller describe them as being sometimes tinged with red or purple. The plant is suitable for rockwork: it also grows readily either in a pot, or in the open border, succeeding best when planted in bog earth in a somewhat moist and shady situation; and it is easily increased by dividing its slightly creeping roots. This and other very early spring-flowering plants, in the mixed border, will be improved by having the shelter of a hand-glass open at the top.

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* From *crux*, a cross, and *fero*, to bear: form of corolla.

All the species of *Cardámine* are anti-scorbutic, and they are said to be very efficacious in cases of disease of the heart. The plants are warmly stomachic, and they have the flavour of the water-cress. The flowers of most of the species are white; but in others they are purple or reddish. The generic name, *Cardámine,* is derived from *kardia,* the heart, and *damao,* to subdue, in allusion to the supposed stomachic qualities of the plants; or, perhaps, as some think, it may be a diminutive of *kardamon* (Gr.), water-cress, the taste being similar.

The order (*Crucíferæ*) to which Cardámine belongs is an extensive one, consisting of herbs, or rarely undershrubs, with alternate leaves, without stipules, and with the flowers in terminal racemes. The Cruciferous plants are widely spread over the globe, but they are chiefly found in the northern hemisphere: they are scarce within the tropics, and in some districts entirely unknown. Crucifers are readily distinguished by their flowers, which have four divisions to the calyx and the corolla, the four sepals being placed alternately with the petals, the latter forming a cross, and hence the name of Cruciferous (cross-bearing); there are six stamens, two of which are generally shorter than the others, or very rarely wanting; there are two carpels; and there is one style, and a divided stigma. The seed-vessel is a kind of pod, either short and broad, like that of the Shepherd's Purse (*Capsélla Búrsa-pastòris*), when it is called a silicle, or long and narrow, like that of the Cabbage (*Brássica oleràcea*), when it is called a silique. The two valves of the silique open naturally when ripe, curving upwards, and the seeds are deposited on a thin membrane (called the dissepiment) between the cells. The great importance of this family of plants to mankind can hardly be overstated, containing as it does the water-cress, the turnip, the rape, the mustard, the cabbage and its numerous cultivated varieties (as, for example, the cauliflower, broccoli, kale, kohl-rabbi, etc.), the woad, the seakale, the radish, and many other most useful plants. When their texture is succulent and watery, as in the roots of the turnip and the radish, and as in the leaves of the cabbage tribe, the plants are always edible. Many of the Cruciferous plants possess high anti-scorbutic properties, particularly the mustard, the horse-radish, the scurvy-grass, the common radish, and the different kinds of cress. From the seeds of some of the plants oil is expressed, and used either for culinary purposes or for burning in lamps. Some of the plants, too, are extremely beautiful and delightfully fragrant, as the stocks, the wall-flowers, the sweet alyssum, the candytufts, the rockets, and many others.

PRIMULA DENTICULATA.

PLATE X.—FIG. II.

Prímula denticulàta, Sir James Edward Smith. The toothed-leaved Primrose.
Natural Order—Primulaceæ.* The Primrose Family.

This pretty Indian Primrose was introduced through the medium of the late Dr. Royle, in 1838. It is a native of the mountains of Silhet and Nepal, and is particularly abundant in the vicinity of Katmandu, and in Gossain-Than, where its dense umbels of bright lilac flowers, on stalks six or eight inches high, produce a striking effect. It is a perennial, with a root consisting of several thick fleshy fibres. While young, Dr. Wallich says, "it bears on the top of this root a number of large, oval, concave, acute, closely imbricated, rose-coloured membranous bracts, which embrace all the tender parts, and even the imperfectly formed umbel; but as the plant advances in age, most of these disappear." In some instances these bracts have been noticed leafy at the margins. The leaves themselves are oblong-spathulate (oblong and having the upper end broadest, like a spatula), hairy on both sides, from two to four inches long, waved, wrinkled with the tightly reticulated nerves, the margins revolute (rolled back), and sharply toothed: the petiole is broad and reddish.

When first introduced this species was considered a greenhouse plant, and it is still frequently grown in pots, but it is perfectly hardy, and will succeed on rockwork if planted in well-drained and sheltered situations in rich moist loam and grit. It flowers in the open air in April and May, but it may be brought into flower several weeks earlier when grown in pots in the greenhouse or conservatory. It is well suited for the mixed border, but, as it flowers in early spring, and is, therefore, liable to be injured by spring frosts, a warm and sheltered situation should be chosen for it. It is easily increased by division of the roots, or by seeds.

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* The character of the order *Primulàceæ* is given in page 14.

This species is considered by some to be nearly allied to the very pretty Bird's-eye or Mealy Primrose *(P. farinòsa)*, a somewhat rare British plant. There is a striking dwarf variety *(P. denticulàta nàna)*, which is also well worthy of a place in collections. One popular name by which *P. denticulàta* is known is the Purple Nepal Cowslip.

The genus *Prímula* is an extensive one, and many of the species contained in it are extremely pretty, and are invaluable in early spring, when they flower most profusely and make the flower-gardens and the mixed borders quite gay with their brilliant colours. They all succeed best in a mixture of rich loam and peat; and they are readily increased either by dividing the plants soon after they have done flowering, or by seeds. The generic name is derived from *primus*, the first, in allusion to the early flowering of the plants.

ACÆNA MICROPHYLLA.

PLATE X.—FIG. III.

Acæ̀na microphy'lla, JOSEPH DALTON HOOKER. The small-leaved Acæna.
Natural Order—SANGUISORBACEÆ. The Burnet Family.

THE species composing the genus *Acæ̀na* are curious herbaceous perennials, with a somewhat shrubby character, stemless, or with prostrate, branching stems, and with numerous pinnate radical leaves. The scapes are slender, bearing dense, globose heads or spikes of minute hermaphrodite flowers (that is, with stamens and pistil in the same flower). Dr. J. D. Hooker, in his "Handbook of the New Zealand Flora," says that Acæ̀na is "a remarkable genus, almost confined to the southern temperate and antarctic regions, the exceptions being a few Polynesian and Mexican species, and one Chilian, which last is also found in California. The barbed calyces of various species form burrs, which, in some pastures in Australia, adhere to the sheep in such quantities as seriously to injure the fleece." The leaves of one species (*A. Sanguisórba*) are said by Mr. Backhouse (in his "Narrative of a Visit to the Australian Colonies") to be an excellent substitute for tea. The plant is common everywhere in Tasmania, and is well known from the annoyance caused by its fruit hooking to the stockings and other parts of the dress of pedestrians. The generic name is derived from *akaina*, a thorn, in allusion to the thorns or bristles on the calyx or fruit.

The *A. microphy'lla* is a small, tufted, procumbent, much branched plant, glabrous (smooth) or nearly so, with brownish green pinnate leaves, having from two to six pairs of deeply serrated or notched leaflets, those at the top being the largest. The greenish inconspicuous flowers are produced in close round heads (large for the size of the plant), and are furnished with long crimson or rosy spines which are the angles of the four-angled calyx thickened or produced into rigid, divaricating spines, that are rarely hispid (rough with stiff hairs) at the apex. This very singular plant is a native of several parts of New Zealand, in one part (the Ashburton range) growing at an elevation of two thousand feet, and it is quite hardy in this country. It succeeds best in sandy loam and peat, and it is easily increased by division. It is suitable for planting on the lower parts of rockwork, beneath the eye, where the globular heads of bright crimson spines can be seen; and the dense tufts into which the plant spreads, forming quite a carpet, will produce a good effect in the mixed border in summer and autumn, either alone or underneath taller-growing plants that are not placed very close together. Where the soil is suitable, it may even be used as an edging plant.

For an opportunity of figuring this remarkable plant I am indebted to Messrs. Backhouse and Son, of York, who call it *A. nòvæ-Zelándiæ*, a name which, I think, it is not desirable to retain, and should be discarded, as there are four other species of the genus natives of New Zealand.

The order to which Acæ̀na belongs (*Sanguisorbàceæ**) is a small one, containing about a dozen genera, which are still retained in the order *Rosàceæ* (the Rose family) by many botanists, though the late Dr. Lindley considered that they appeared to demand a distinct station, on account of their constantly apetalous flowers, their hardened calyx, and the reduction of carpels to one only; but, as the order is not distinguishable by any other characters, he maintained that the genus *Agrimònia* (sometimes stationed in it) must be preserved among Roseworts, because of its petals, and from its habit being by no means that of the Sanguisorbs. The Burnet family consists of herbaceous plants or undershrubs, occasionally spiny. The leaves are simple and lobed, or compound, alternate, with stipules. The flowers are small, often capitate (growing in a head): the calyx has a thickened tube and a three, four, or five-lobed limb, its tube being lined with a disk; there are no petals; the stamens are definite, sometimes fewer than the segments of the calyx, with which they are then alternate, arising from the orifice of the calyx; the anthers are two-celled, innate (that is, attached to the apex of the filament, or stalk, of the stamen), bursting longitudinally, occasionally one-celled, bursting transversely. The ovary is solitary and simple, with a style proceeding either from the apex or the base; the ovule is solitary and always attached to that part of the ovary which is next the base of the style; the stigma is either compound or simple. The nut is solitary, and enclosed in the often indurated tube of the calyx: seed solitary, suspended or ascending; the embryo is without albumen; the radicle is either superior or inferior; and the cotyledons (seed-leaves) are large and plano-convex (flat on one side and convex on the other, as a plano-convex lens).

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* From *Sanguisórba—sanguis*, blood, and *sorbeo*, to absorb: one species of the genus (*S. officinàlis*) was formerly considered a powerful vulnerary.

Sanguisorbs are natives of heaths, hedges, and exposed places in Europe, North and South America beyond the tropics, Australia and New Zealand, and the Cape of Good Hope; in which latter country they may be said to represent the Roseworts of Europe. Their general character is astringency. A decoction of *Alchemílla vulgàris* (the Lady's Mantle), a well-known British plant, is slightly tonic, and is asserted, by Frederick Hoffmann and others, to have the effect of restoring the faded beauty of ladies to its earliest freshness. *Sanguisórba officinàlis* (the Common Burnet), another very well-known British plant, is an useful fodder. The root of *Sanguisórba canadénsis* (the Canadian Burnet) is said to be bitter, astringent, nauseous, and emetic, and its fruit stupefying. Besides Acæ̀na, Alchemílla, and Sanguisórba, other genera of the order, pretty well known, are, *Adenóstoma*, *Cliffórtia* (most of the species of which are singular Cape plants), *Margaricárpus* (which has pearly succulent fruit), and *Potèrium*, one species of which (*P. Sanguisórba*) is common on chalky hills in England, and is called the Salad Burnet (as well as the Garden Burnet), from the leaves being sometimes put into salads.

ORCHIS FOLIOSA.

PLATE XI.

O'rchis foliòsa, Solander, MSS. The Leafy-spiked Orchis.
Natural Order—Orchidaceæ.* The Orchid Family.

The genus *O'rchis* contains some very curious and beautiful species (about ten or twelve are British plants), which are rather difficult to cultivate. The flowers of most of them are remarkable for their grotesque forms, some resembling the heads and bodies of animals, as in the Bee Orchis, the Fly Orchis, and the Spider Orchis (which three kinds are now placed in the genus *O`phrys*), and in the Lizard Orchis (*O'rchis hircìna*), the Monkey Orchis *(O. tephrosánthos)*, and the Man Orchis *(A'ceras* or *O`phrys anthropóphora)*. Few of the species produce seeds with certainty, as, from the peculiar relative arrangement of the pollen masses and the stigma in Orchids, it would appear, from the observations of Mr. Charles Darwin, that the flowers can only very rarely be self-fertilized, and that, almost universally, insect agency is necessary to transport the pollen from flower to flower.† These interesting plants are, therefore, usually propagated by their bulbs or tubers, which, in

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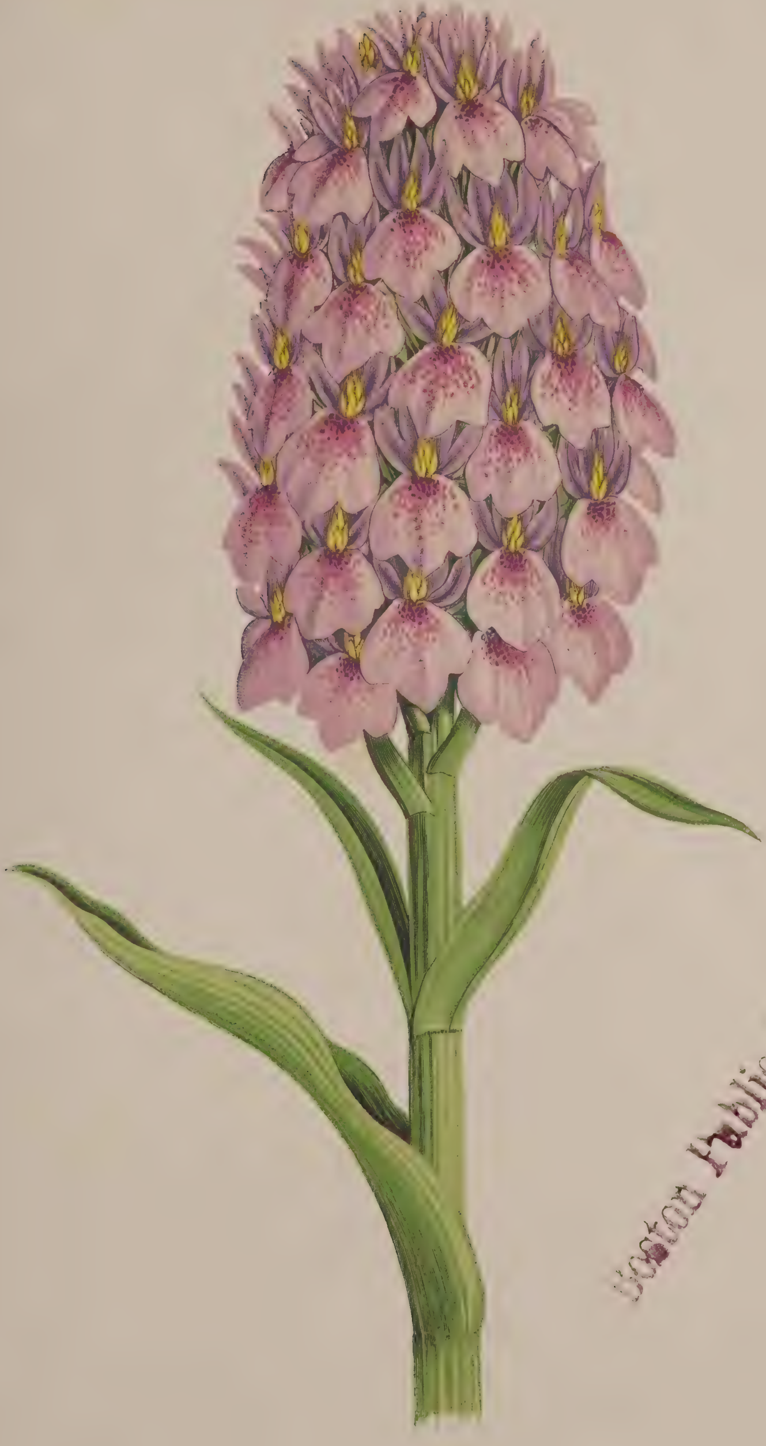
* The character of the order *Orchidàceæ* is given in page 3.

† All who may desire to know the manner in which the fertilization is effected by the aid of insects, will do well to read Mr. Charles Darwin's very interesting work "On the Fertilization of Orchids," in which the author's object is, first, "to show that the contrivances by which Orchids are fertilized, are as varied and almost as perfect as any of the most beautiful adaptations in the animal kingdom; and, secondly, to show that these contrivances have for their main object the fertilization of each flower by the pollen of another flower." I think and hope, with Mr. Darwin, that, as Orchids are universally acknowledged to rank amongst the most singular and most modified forms in the vegetable kingdom, the facts given in his work may "lead some observers to look more curiously into the habits of our several native species;" and I believe, with him, that "an examination of their many beautiful contrivances will exalt the whole vegetable kingdom in most persons' estimation."



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ORCHIS FOLIOSA.

XI

most of the species, are of a peculiar structure and economy. An Orchis, on being taken out of the ground, is found with two solid masses, ovate or fasciculated (arranged in bundles or parcels), at the base of the stem, above which proceed the thick fleshy fibres which nourish the plant. One of these bulbs or tubers is destined to be the successor of the other, and is plump and vigorous, whilst the other, or decaying one, is always wrinkled and withered. From the withered one has proceeded the existing stem, and the plump one is an offset, from the centre of which the stem of the succeeding year is destined to proceed. By this means, the actual situation of the plant is changed about half an inch every year; and, as the offset is always produced from the side opposite to the withered bulb or tuber, the plant travels always in one direction at that rate, and, in a dozen years, will have marched six inches from the place where it formerly stood.

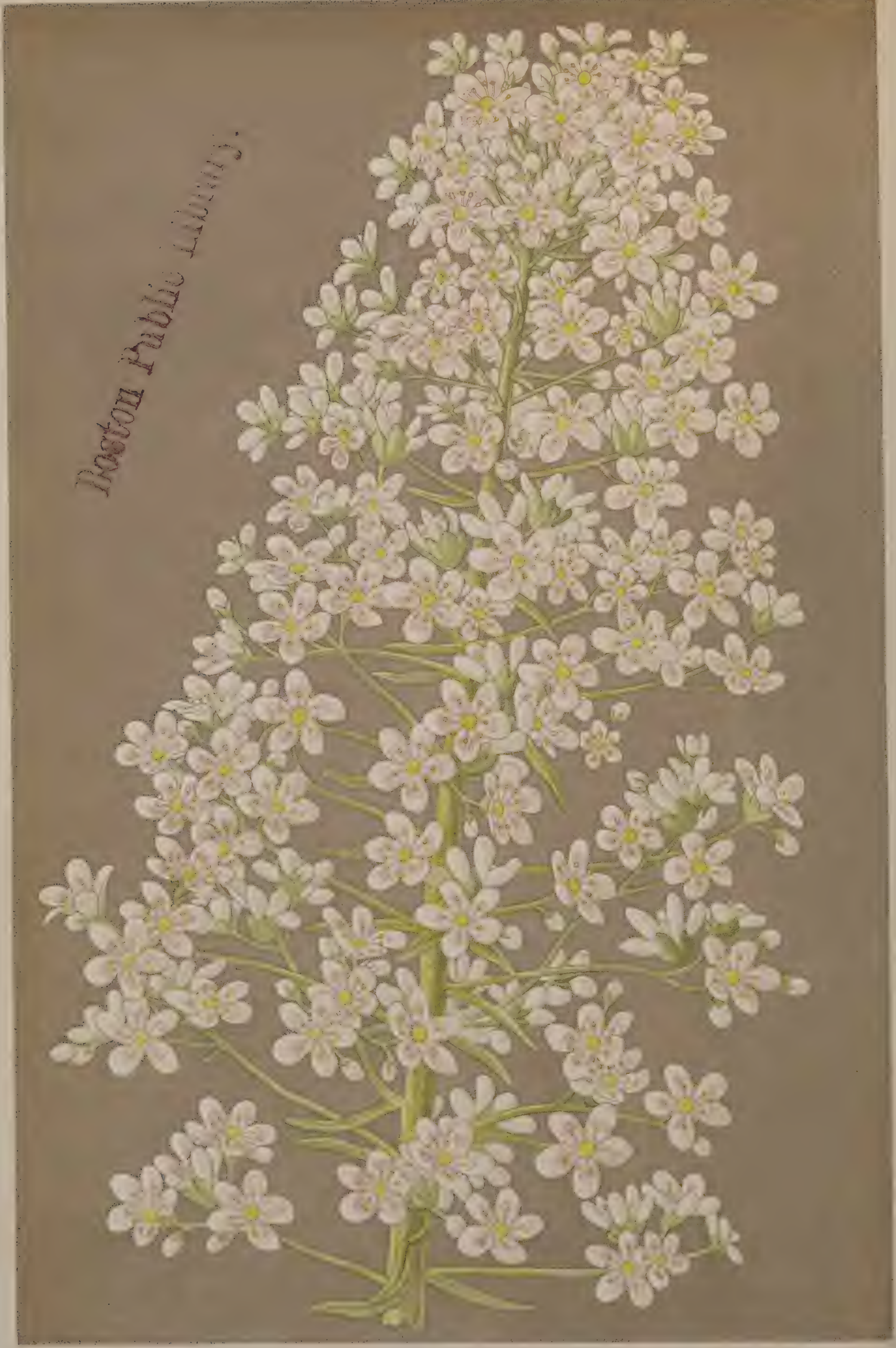
In the garden, the British Orchids (all of which are terrestrial) can hardly be said to be propagated: the species are generally taken up with great care from their native habitats with balls, and transferred to a shady border, where, if they succeed, they will, in a year or two, begin to increase, and will become very beautiful objects. Those which grow in the open fields are generally found in calcareous soil, and those in bogs or woods thrive best in peat, or peat and loam mixed. *O'rchis militàris* and *O. fúsca*, according to Salisbury, succeed best in chalky soil, free from all manure whatever; but they will, he says, endure more moisture than would be supposed, for he found them in a very wet part of the meadow below the terrace at Mill Hill, where they had, no doubt, been planted by Mr. Peter Collinson (whose gardens had attained such a high celebrity about the middle of the last century). *O'rchis conópsea* affords another singular instance of this sort, for it is found growing wild on the driest limestone, mixed with *O. pyramidàlis*, and in bogs where one can hardly tread, mixed with *Epipáctis palústris.* The best time for transplanting the British Orchids, according to Sweet, is when they are in a growing state.

The Orchis affords the preparation known as Salep, imported from Turkey and other parts of the Levant; and which has also been made in this country from *O. máscula* and other British species. The root is washed, the brown skin rubbed off, and then dried in an oven and ground into powder. This powder, as an article of diet, is accounted extremely nutritious, containing a great quantity of farinaceous matter in a small bulk. *O. máscula* is very abundant in the meadows of Gloucestershire, and Salep has been made from its bulbs, equal to that imported.

O'rchis is the Greek name of the plant. In Arabic, according to

Forskahl, it is called *sahhleb*, whence, doubtless, our word *salep* has been obtained.

The very fine species of Orchis figured in our plate *(O. foliòsa)* is a native of woods and copses in Madeira, whence it was introduced in 1829. It is, indeed, a species peculiar to that island; and, according to the Rev. R. T. Lowe (formerly, for twenty years, British Chaplain in Madeira), it is found in rocky banks of Ribeiro Frio, amongst grass and bushes of *Spártium cándicans*, at an elevation upon the hills of three thousand feet. Mr. Lowe states that he gathered one native specimen which measured two feet seven inches in height. The plant is very much like one of our native species *(O. latifòlia)*, from which, however, it differs in being larger in all its parts, in having a distinctly three-lobed flat lip, instead of a lozenge-shaped convex one, a shorter and more slender spur, and a taller stem. In this country the plant produces its fine spikes of purple flowers, sometimes three inches broad, in May, and it succeeds extremely well, either in well-drained pots, or a turf pit, in a soil composed of the turfy portions of heath mould, with a mixture of moss and sand, or in one of rich moist peat, loam, and sand. Messrs. Backhouse and Son state, that it will often thrive in an ordinary border. Like many others, this species varies with spotted and spotless leaves; and in some specimens the flowers are of a much darker colour than represented in our plate.



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SAXIFRAGA LONGIFOLIA VERA.

XII

SAXIFRAGA LONGIFOLIA VERA.

PLATE XII.

Saxífraga longifòlia vèra. The long-leaved Saxifrage.
Natural Order—SAXIFRAGACEÆ. The Saxifrage Family.

Saxífraga is a very extensive genus of beautiful alpine plants, most of which are particularly suitable for planting on rockwork, or on the sides of naked banks; while some are well adapted for edgings to walks or beds, and also for planting in beds in a geometric flower garden. Many of the more rare and tender kinds require the protection of a frame in winter, and these should, therefore, be grown in pots. The most suitable soil for all of them is one composed of moist loam and grit; and all are readily increased either by division or by seeds. Most of the species are perennials with either fibrous or granular roots, and only a few are annuals: of the former there are more than a dozen which are natives of Britain, one of the best known being the London Pride *(Saxífraga* or *Robertsònia umbròsa)*, which, though a native of mountainous districts in Yorkshire and in Ireland, endures the smoke and impure air of London; while of the latter, there is one, the Rue-leaved Saxifrage *(S. tridactylìtes)*, which is common on rocks and on very old walls in England, Scotland, and Ireland, flowering in the spring and early summer. The different species of this favourite genus are subject to great variation in appearance, and to much diversity of opinion among those who profess to be best acquainted with them. The new genera into which several authors considered that Saxifraga ought to be divided, have not, however, been generally adopted.

The generic name is derived from *saxum*, the stone, and *frango*, to break, in allusion to the medicinal qualities which some of the species were formerly supposed to possess.

The *S. longifòlia* is one of the most beautiful of the species with silvery margins to the leaves, and it has been most appropriately called the Queen of the Silvery Saxifrages. It is a native of the higher parts of the Pyrenees, and has been found quite hardy in this country. The leaves are narrow and rigid, with beautiful silvery margins, and form most effective rosettes (often from six to eight inches in diameter), making the plant attractive at all seasons of the year; while the pure white flowers are produced in early summer in noble panicles, from a foot to eighteen inches in length, and more or less dense, the stems being covered with short, stiff, glandular hairs. This most beautiful Saxifrage is equally suitable for planting on the face of rockwork or on the face of an old wall, provided there is space for a sufficient depth of soil into which it can send down its roots. In beds or borders, somewhat raised, it will succeed very well, and also in pots or vases in the greenhouse or conservatory, the pots or vases being furnished with good drainage, and a liberal supply of water being given during the spring, summer, and autumn. This most striking, distinct, and desirable species is readily propagated by seeds, which are ripened in abundance.

I have to thank Messrs. Backhouse and Son, of York, for kindly forwarding the plant from which the figure in the plate is taken.

The *S. lingulàta* of Bellardi (an Italian botanist), the Tongue-leaved Saxifrage, is considered by some authors to be closely allied to *S. longifòlia;* and the *S. crustàta* of Vest (a Styrian botanist), the Crustaceous-edged Saxifrage, is regarded as a very dwarf variety of it, with the margins of the leaves thickly set with incrustations.

The order *Saxifragàceæ* is an extensive one, consisting mostly of small herbaceous plants, though some of the exotic genera are trees or shrubs, with alternate or opposite leaves without stipules. In the flowers of these plants, the calyx has generally five, rarely four, sepals, more or less adherent to each other and to the ovary: the corolla has five spreading petals (with short claws), which are seldom wanting; there are either five stamens or twice that number. The ovary usually consists of two carpels, diverging at the apex; the partition between these is sometimes complete, forming a two-celled ovary, but occasionally it is absent, when it is one-celled: the styles (which, in the greater number of this family, are only two) are usually distinct, but sometimes they are adherent. Each cell contains a large number of minute ovules. The fruit, which is a capsule, is generally enclosed in the calyx, and opens only at the point. There is one genus, however, in which there is no adhesion between the calyx and the ovary; and there are several genera in which the adhesion does not extend far up. The order has a wide range: many of the plants are natives of mountainous tracts in Europe, and the northern parts of the world, the herbaceous species frequently forming the chief beauty of that rich turf which is found near the snow in high Alpine regions. Some grow on rocks and old walls, and in hedgerows, or near rivulets, or in groves. Only a very few are found in tropical countries. The whole of the plants of the order are more or less astringent: the root of *Heùchera americàna* is powerfully so, whence it is called, in North America, Alum-root. Otherwise, the species possess scarcely any known useful properties; though some have maintained that *Saxífraga crassifòlia* may be used as a substitute for tea; and that *Chrysosplènium alternifòlium* had some small reputation, in former days, as a slight tonic. Of the three known species of *Chrysosplènium* (the Golden Saxifrage), two are British plants, viz., that already mentioned, which has alternate leaves, and *C. oppositifòlium,* the leaves of which are opposite: both are extensively used as salad plants in the Vosges, under the name of *Cresson de Roche.* Of the herbaceous genera of the order, besides those already mentioned, the best known are, *Parnássia* (the Grass of Parnassus), one species of which (*P. palústris*) is a most elegant British marsh plant; *Drósera* (the Sundew), of which there are three British species, and other species are natives of New Holland, North America, and the Cape of Good Hope; and *Dionæ̀a* (Venus's Fly-trap), a North American plant, with the leaves curiously formed of two lobes, which close and open as if hinged, both lobes being furnished with glandular hairs so extremely irritable that the leaves close at the slightest touch and entrap any insect which may be within the lobes. Of the genera of the order which are decidedly shrubs, several are very well known, being generally found in the gardens of this country, as, for example, *Deútzia, Escallònia, Hydrángea,* and *Philadélphus* (the Garden Syringa, or Mock Orange), the flowers of the most common species of which (*P. coronàrius*) smell like those of the Orange, and the leaves taste like Cucumber.

DRABA AIZOIDES.

PLATE XIII.—FIG. I.

Dràba aizöìdes, Linnæus. The Aizoon-like Draba, or Sea-green Whitlow Grass.
Natural Order—Cruciferæ.* The Cruciferous Family.

Most of the species of *Dràba* are dwarf evergreen herbaceous plants (only a very few being either annuals or biennials), generally with the leaves collected in tufts, and with the flowers (which are either white or yellow) in terminal racemes. They are natives, for the most part, of the cold mountainous countries of Europe: a few are found in North America. In some of the species the seed-pod is a silique (that is, long and tapering, as in the Cabbage), while in others it is a silicle (short and broad). Several of the species are very pretty, and very suitable for planting in sunny fissures on rock-work, or for growing in pots, among other Alpine plants. These little plants succeed best in a mixture of loam and peat, or of loam and grit; and they are easily increased either by dividing the roots or by seeds. The name of *Dràba* is from *drabe*, acrid, biting, in allusion to the taste of the leaves of many of the species.

D. aizöìdes is the most striking of the five or six British species of the genus. This pretty little rock plant is only found wild in South Wales, on rocks and walls at and near Pennard Castle, near Swansea. The leaves are fringed with rigid hairs, and are produced in dense cushion-like tufts or clusters. The flowers are of a bright yellow, and appear in March and April. The plant does not grow more than three or four inches high, and it is very suitable for planting on rockwork, on walls, or on ruins, where the rich golden hue of the petals, and the clusters of the remarkably fringed evergreen leaves will produce a good effect for several weeks in early spring. As this species of *Dràba* does not ripen seed very freely, the most ready mode of propagating it is by division of the roots.

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* The character of the order *Crucíferæ* has been already given in page 30.

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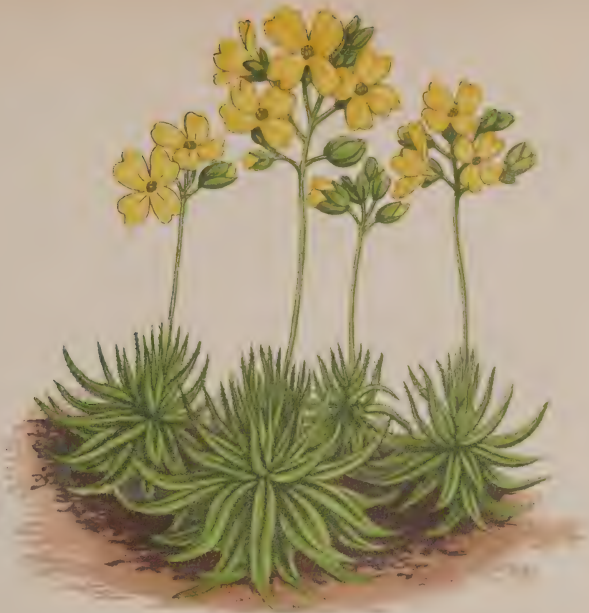

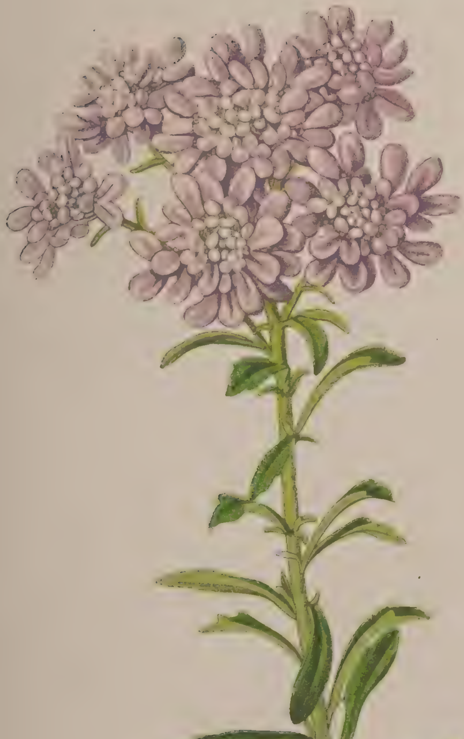

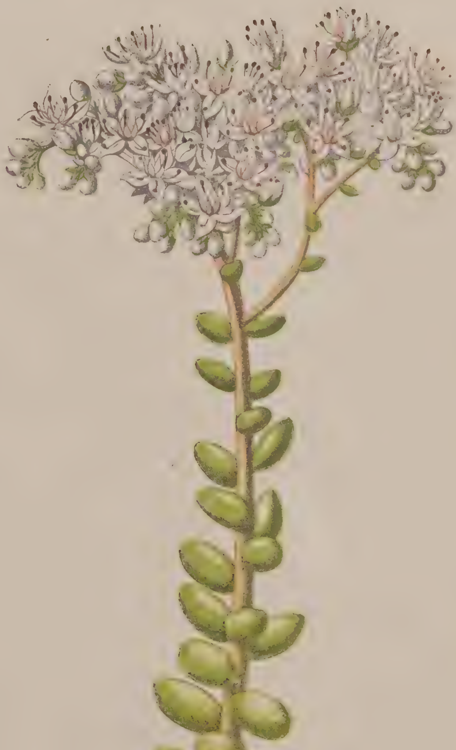

DRABA AIZOIDES.

IBERIS BUBANI.

SEDUM TURGIDUM.

XIII

IBERIS BUBANII.

PLATE XIII.—FIG. II.

Ibèris Bubànii, Louis Deville. M. Bubani's Candytuft.
Natural Order—Cruciferæ.* The Cruciferous Family.

All the species of *Ibèris* are very pretty plants with narrow or pinnatifid leaves, and white, pink, or purple flowers, of easy culture, and well known in our gardens under the popular name of Candytuft; a name which was originally applied to the *I. umbellàta* only, an annual species with purple flowers which has long been a great favourite, and is generally found in our flower-gardens, and which was first discovered in Candia, and called *Thláspi Cándiæ* by Lobel and Dodonæus. The flowers, which are easily recognised by the unequal petals, are produced in large corymbose racemes, which, in some of the species, are elongated, and take somewhat of a spike-like character. This is especially the case with one of the annual species; but the flowers of most of the perennial species are corymbose. The generic name is derived from *Iberia,* the ancient name for Spain, because some of the first discovered species are natives of that country.

I. Bubànii is a very pretty, dwarf, compact-growing biennial species from the Pyrenees, with pink, or, rather, lilac-coloured flowers, and very deep green glossy leaves, which form dense rosettes, producing a very good effect when covered with a profusion of branching flower-stems. A soil of rich sandy loam is best for it, and it may be propagated by seeds. Though this plant in some points resembles very much the *I. Bernardiàna* of MM. Grenier and Godron, and, indeed, is considered, by M. Grenier, as identical with that species, yet M. Louis Deville (the discoverer of *I. Bubànii*) and others maintain that it differs in being a biennial (while *I. Bernardiàna* is an annual), and in some other important particulars. Hence, M. Deville (who first found the plant, in flower and in seed, in August 1858, at Belembits, near Arrens, in the valley of Azun, Hautes-Pyrénées) named it in honour of M. Bubani, an Italian botanist.

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* The character of the order *Crucíferæ* will be found in p. 30.

The figure in our plate is taken from a plant kindly forwarded by Messrs. Backhouse and Son, of York.

SEDUM TURGIDUM.

PLATE XIII.—FIG. III.

Sèdum túrgidum, Ramond. The Turgid Stonecrop.
Natural Order—Crassulaceæ.* The Crassula Family.

This species (a native of the south of France) resembles *Sèdum álbum*, which is a British plant, occasionally met with on rocks, walls, and the roofs of houses (generally in rather sheltered situations) in Somersetshire, and on the Malvern Hills in Worcestershire. M. Ramond first gave it the name of *S. túrgidum*, and ten years later it was named *S. micránthum* by M. Bastard, or Batard (a writer upon the Flora of France); while the late Professor A. P. de Candolle, considering it only a variety of *S. álbum*, called it *S. a. β micránthum*.

The flowers, which are produced in cyme-like panicles, appear in June and July: they are white, like those of *S. álbum*, the edges of the petals being sometimes slightly tinged with pink. The leaves are fleshy, and have an inflated or swollen appearance, as the specific name implies. The plant is a perennial of easy culture, like most of the other kinds of Sedum, and suitable for planting on the less prominent parts of rockwork, and on walls, or on old ruins.

Another species, to which the late Professor De Candolle gave the name of *S. túrgidum*, is now regarded by some as the *S. tenéllum* of Bieberstein.

I have to express my acknowledgments to Messrs. Backhouse and Son for kindly forwarding the plant from which the figure in the plate is taken.

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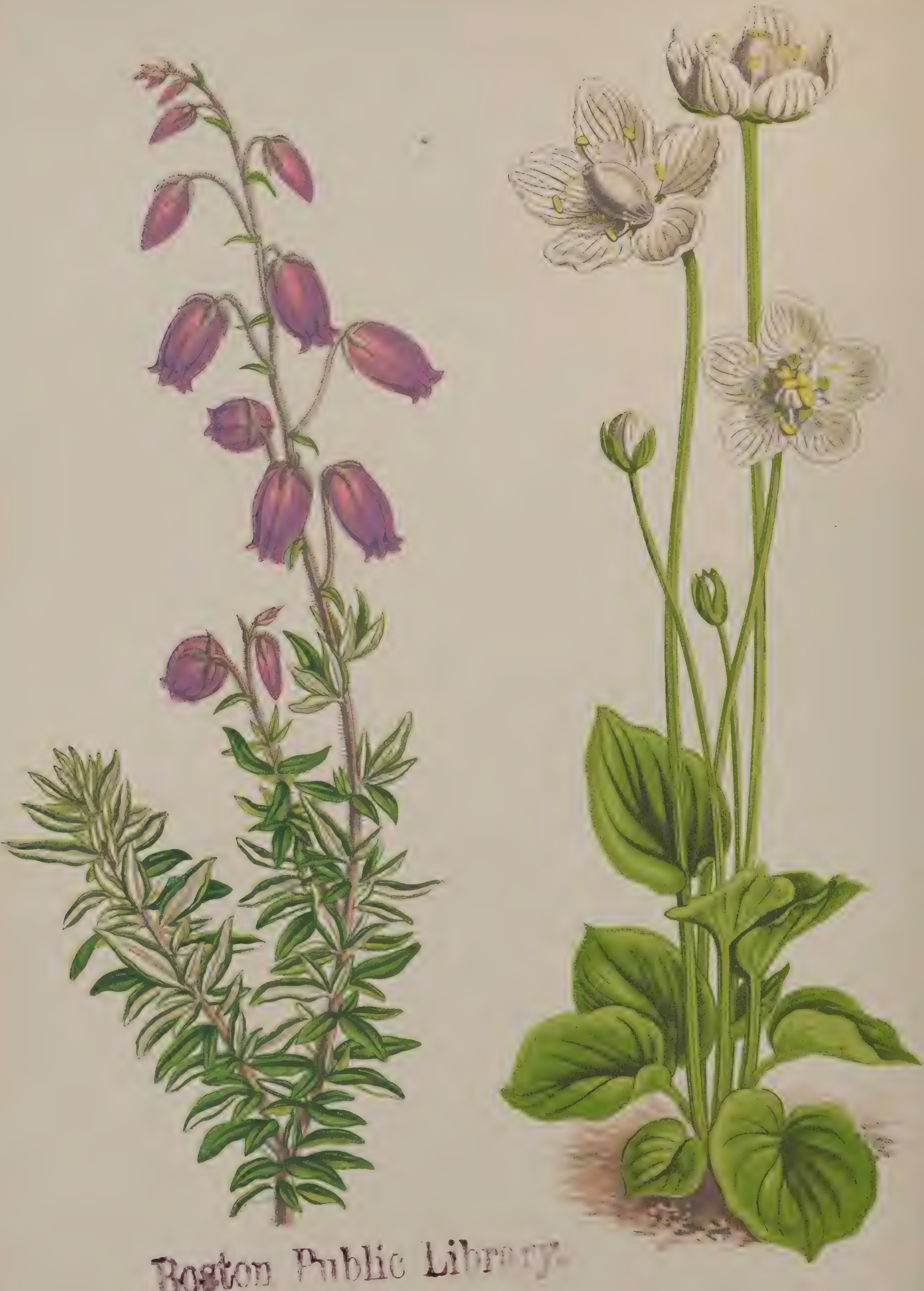
* The character of the order *Crassulàceæ* will be found in p. 6.



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MENZIESIA POLIFOLIA. PARNASSIA PALUSTRIS.

XIV

MENZIESIA POLIFOLIA.

PLATE XIV.—FIG. I.

Menzièsia polifòlia, Sir J. E. Smith. The Irish Menziesia, or St. Dabeoc's Heath. *Natural Order*—Ericaceæ.* The Heath Family.

Menzièsia is a small genus of very ornamental, dwarf, heath-like shrubs, with the flowers in graceful terminal racemes. Three of the species are very suitable for planting in sunny fissures on rockwork, or on banks, the best soil for them being moist sandy peat. The name was given to the genus by Sir James Edward Smith in honour of Archibald Menzies, F.L.S., etc., an assiduous botanist, who acted as surgeon and naturalist to the Expedition under Vancouver, and who, while thus engaged, collected many specimens of plants on the north-west coast of America, in New Holland, Van Diemen's Land, and other places. Modern botanists have divided the genus into almost as many genera as there are species.

M. polifòlia is a bushy, heath-like, evergreen undershrub, growing about a foot or two feet high, with ascending stems (which are often of a reddish brown colour) clothed with projecting hairs, small leaves, which are green and shining above and clothed with white cottony down underneath, their margins being entire and slightly revolute (rolled back), and terminal racemes of very elegant purple flowers, which continue to appear from June to September. It is a native of Ireland (where it was first found in Mayo and Galway by Lhwyd, previous to 1699) and the Pyrenees, growing on the sides of mountains, on moors, and on dry heaths, where it is very ornamental. It may be propagated by layers or by cuttings. Botanists appear to have differed much as to the name of this species: Linnæus first called it *Andrómeda Dabœ̀cia*, and then *Erìca Dabœ̀cia;* Ray, *Erìca hibérnica;*

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* The character of the order *Ericàceæ* has been already given in page 23.

Hudson (in his "Flora Anglica"), *Vaccínium cantábricum;* A. P. de Candolle, *Menzièsia Dabœ̀cia;* and David Don, *Dabœ̀cia polifòlia* (St. Dabeoc's Heath, the name in Ireland). And of popular names, besides the two already given, there are the following, namely: Irish Whorts, Irish Heath, Cantabrian Heath, Bell Heath, Heath Gardrobe, Polium-leaved Menziesia, and St. Dabeoc's Menziesia.

There are several varieties of this species of Menziesia, differing in some slight particulars, namely: the dwarf *(M. p. nàna)*, the long-leaved *(M. p. longifòlia)*, the broad-leaved *(M. p. latifòlia)*, the pale-flowered *(M. p. pállida)*, and the dark purple *(M. p. atropurpùrea)*. There is yet another, which has large pure white flowers, and which is sometimes found in collections under the name of *M. p. globòsa.* This may be the same as the very beautiful variety with white flowers *(M. p. flòre álbo)* which was discovered in the county of Mayo in 1832 by the late Dr. J. T. Mackay, and by him sent to the late Professor David Don, who, in 1835, gave a very well-executed figure of it in the third volume of the second series of Sweet's "British Flower-Garden," under the name of *Dabœ̀cia polifòlia β álba.*

PARNASSIA PALUSTRIS.

PLATE XIV.—FIG. II.

Parnássia palústris, Linnæus. The Marsh Parnassia, or Common Grass of Parnassus.

Natural Order—Saxifragaceæ.* The Saxifrage Family.

The species of *Parnássia* are elegant herbaceous plants, with perennial fibrous roots, entire leaves (mostly radical), and curious white flowers, which are produced on erect stems, each stem usually bearing a single leaf, and a single terminal flower. These interesting little plants are natives of peat-bogs, and wet places in Europe, Asia, and North America, chiefly in Alpine districts; and they succeed best in a wet but well-drained soil composed of peaty loam and grit. Though the characters of *Parnássia* are so well marked that it is not easy to confound it with any other genus, yet its place in the Natural System has been much disputed. Most generally it has been placed with the Sundews in *Drosceràceæ*, next to the Violet and Milkwort families,* but its close affinity with the Saxifrages, Mr. Bentham says, "has now been fully proved, especially by the recent publication of several curious Himalayan species." The generic name is derived from Mount Parnassus, the abode of grace and beauty, where, on account of the elegance of its form, this plant is feigned to have first sprung up.

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* The character of the order *Saxifragàceæ* has been already given in p. 40.

P. palústris is one of the most elegant of our native marsh plants, and very interesting on account of the singular structure of the flower. It is frequently found in bogs, in high wet pastures, and on moist heaths in many parts of Britain, more especially in the mountainous districts of Wales and in the northern counties of England, growing in company with the Sundew, and rivalling it in singularity of structure. While in the Sundew the peculiar glandular hairs, for which it is remarkable, are found only on the leaves, in the Grass of Parnassus they exist on the flowers. The stamens are about half the length of the petals, at first not longer than the ovary, but as soon as the flower is fully expanded, one of the filaments gradually increases in length, and presents its anther over the stigmas (of which there are four), where it remains till it has shed its pollen, after which it recedes from the ovary, and falls back to the petals. Thus, one stamen having performed its destined office and retired, a second advances in like manner; as, also, do the other three in succession, till the pollen of all is discharged, and the fertilization of the ovules (young seeds) is thereby completed.† Alternating with the stamens, there are five very beautiful, inversely heart-shaped, fleshy, green scales, divided at their edge into numerous rays, each of which is tipped with a beautiful pellucid yellowish gland; so that the flower, when viewed from above, appears set with sparkling jewels. The petals are broadly egg-shaped, white, and delicately striated with pellucid, greenish veins. The rather large striking white flowers appear in August and September, and are produced on angular stems from three to ten inches or a foot high, each stem supporting a single flower, and bearing, midway, a single sessile, stem-clasping, entire leaf. The radical leaves (on long foot-stalks) are smooth, broadly heart-shaped, entire, and deeply and equally veined.

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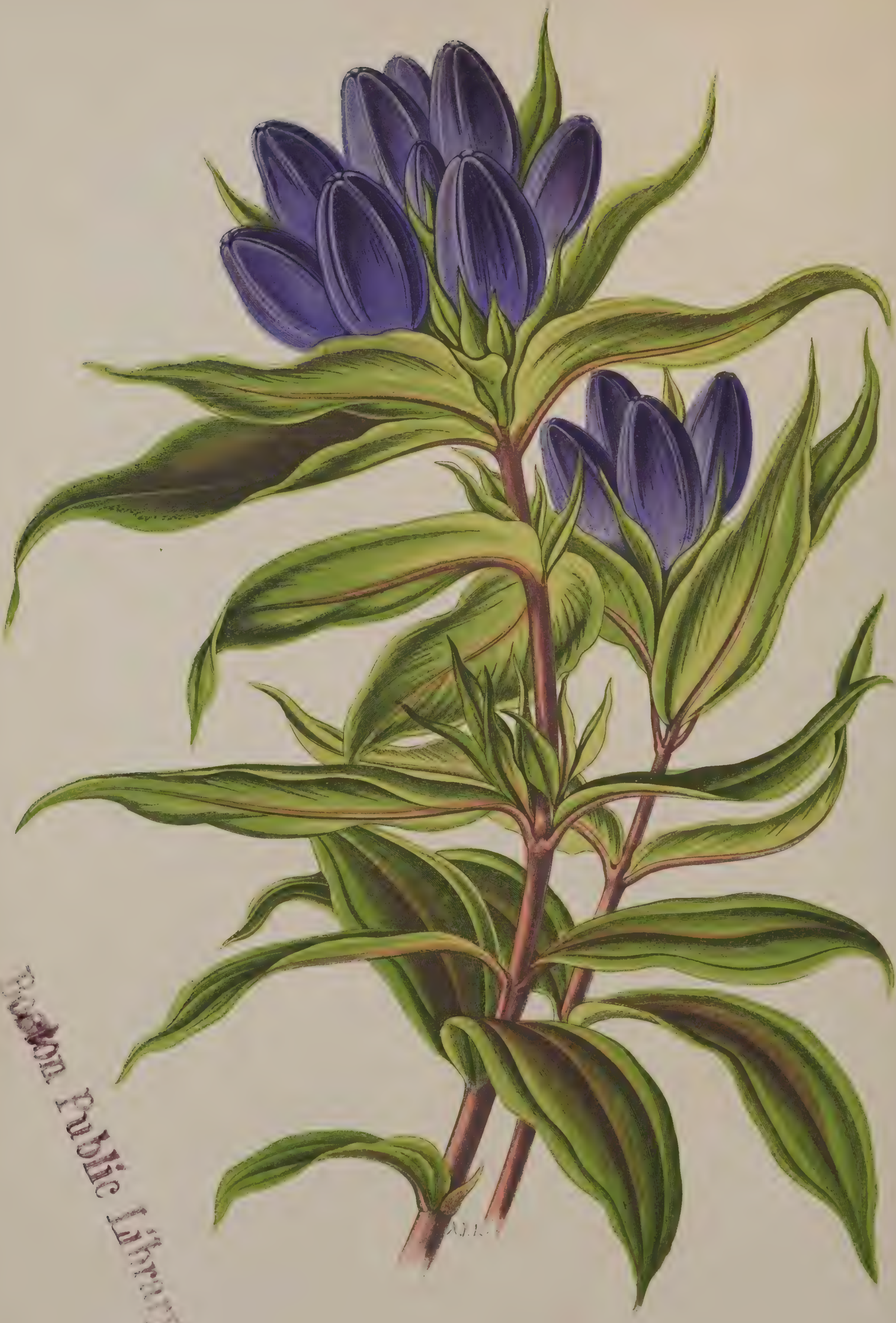
* *Violàceæ* and *Polygalàceæ*.

† The late Mr. William Baxter (who, for a very long period, so ably filled the post of Curator of the Botanic Garden of the University of Oxford) found, from observations made by him, in September 1828, on some plants of the *Parnássia* which were then in flower in the Oxford Botanic Garden, that "each stamen occupied about twenty-four hours in elevating itself above the stigmas, and discharging its pollen; after which it was about the same length of time in retiring from the stigmas to the petals. Eight days elapsed between the opening of the flower and the receding of the fifth and last stamen from the germen" [the old name of the ovarium, or ovary]. The time, however, will, it is believed, vary in proportion to the supply of heat and moisture.

This very interesting and beautiful little plant should be grown in all gardens where spots sufficiently moist or boggy can be found; or, if there should be a tank or basin devoted to aquatic plants, it may be grown in pots partially immersed in water. Either plants or seeds are most easily to be obtained. The seeds should be sown in wet soil as soon as they are gathered.

I am indebted to Messrs. Backhouse and Son for kindly forwarding the plant from which the figure in the plate is taken.



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GENTIANA ANDREWSI.

XV

GENTIANA ANDREWSII.

PLATE XV.

Gentiàna Andrèwsii, Grisebach. Andrews's Gentian.
Natural Order—Gentianaceæ. The Gentian Family.

All the species included in the genus *Gentiàna* are very beautiful herbaceous plants, with opposite, entire, undivided leaves, and with the flowers (the prevailing colour of which is blue in the British species) either solitary and terminal, or in pyramidal or oblong panicles, the lower ones being often axillary.

Few genera display so full a series of colours in the flowers as this does: red, blue, yellow, and white are all exhibited in it, with many of the intermediate compound tints. Yellow and white are rare in the regions of the Gentians, but red or blue will almost invariably be present: the red species are nearly confined to the Andes of South America and New Zealand. Dr. Jameson, in his "Botanical Notes on the Flora of the Andes of Peru and Colombia," says: "Of sixteen species of Gentian with which I am acquainted, one half are red, four purple, two blue, one yellow, and one white."

Most of the species grow well in rich fibrous loam and gravel, or limestone, on sunny slopes; but a few require peat, and some must be grown in pots, as they require to be protected during the winter. Though many of them may be increased by dividing the roots, most of them produce seed freely. The seeds should be sown in a dry sandy soil in the open border as soon as they are ripe, and they will then quickly vegetate; but if left till spring before they are sown, very probably they will not come up till the second year. Two species of the genus *(G. acaúlis* and *G. vérna)* are very beautiful edging plants: they also look extremely well when grown in pots or vases. The name of *Gentiàna* is said to be derived from Gentius, King of Illyria, who, according to Pliny, first discovered the tonic properties possessed by the stems and roots of some of the species of the genus.

The very handsome species figured in our Plate XV *(G. Andrèwsii)* is a native of North America, where it is frequently found in low grounds and moist woods, flowering in September and October, and whence it was introduced a few years ago. It resembles in some respects *G. Saponària* (the Soapwort-like, or barrel-flowered Gentian), another North American species, a perennial, very frequently grown in our gardens; but it is much more striking and beautiful. It is a biennial, with an ascending stem, growing from twelve to eighteen inches high; and with very smooth leaves (except on the margin, which is a little rough) about three inches long, and an inch or more in breadth. The flowers, which are of a very rich deep purplish blue, never fully open, even under the influence of bright sunshine, but remain nearly closed: they are produced in a somewhat crowded terminal fascicle or head, with one or two in the axils of the upper pairs of leaves. This fine Gentian is very suitable for planting in a mixed border: it may be increased by division and by seed.

I have to thank Messrs. Backhouse and Son, of York, for kindly forwarding the plant from which the figure in the plate is taken.

The order *Gentianàceæ* (which is nearly allied to *Apocynàceæ,* the Dog's-bane Family) is rather a large one, and consists of herbaceous plants, which are generally smooth, and more or less bitter. The leaves are opposite and entire, without stipules. The flowers are produced in terminal, dichotomous (forked) cymes or panicles, with a single flower in each fork. The calyx is tubular, and consists of four, five, or, rarely, of from six to eight divisions. The corolla is regular, with a straight or open tube (sometimes very short), and a spreading limb of as many divisions as the calyx, usually plaited or twisted in the bud. The stamens (which have broad filaments and arrow-shaped anthers) are as numerous as the divisions of the corolla, and alternate with them. The ovary has only a single cell, or it is partially divided into two cells, as in the genus *E'xacum.* The seeds are small and numerous.

All the plants of the order are pretty, and many are extremely beautiful. They are found in all parts of the world, from the regions of perpetual snow upon the summits of the mountains of Europe, to the hottest sands of South America and India. They do not, however, appear in the Flora of Melville Island; but they form part of that of the Straits of Magellan. The most common genus is that which gives the name to the order *(Gentiàna),* several species of which possess medicinal properties (especially *G. lùtea, G. punctàta,* and *G. purpùrea),* the roots being eminently tonic and stomachic; and similar, though more feeble, virtues are found in most of the plants of the order. Of the other genera, the best known are *Chlòra* (the Yellow-wort), *Erythrœ̀a, Chirònia, Spigèlia* (the Worm-Grass), *Lisiánthus, Villársia,* and *Menyánthes* (the Buck-bean). Of this last, the only known species *(M. trifoliàta)* is a well-known and beautiful British marsh or bog plant, which is intensely bitter. Its rhizome is reckoned one of the most valuable of known tonics; but large doses produce vomiting. Withering says that it may be used as a substitute for hops in making beer. *Villársia nymphœöìdes* (another British marsh, or, rather, aquatic plant) acts in a similar way, but is weaker.

MERENDERA BULBOCODIUM.

PLATE XVI.—FIG. I.

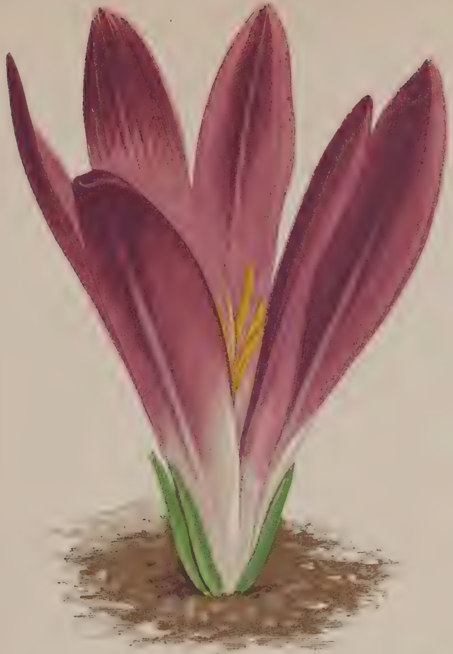
Merendèra Bulbocòdium, Ramond. The Bulbocodium-like Merendera.
Natural Order—Melanthaceæ. The Melanthium Family.

The genus *Merendèra* contains only two or three species, which are bulbous plants, thriving well in light loamy soil, and being readily increased either by seeds or by off-sets from the bulbs. *Merendèra* is a name given to *Cólchicum* by the Spaniards, and applied to this genus because of its affinity.

M. Bulbocòdium is a very pretty little plant, very much resembling *Bulbocòdium vérnum* (with which it has by many been confounded), but producing its reddish purple flowers in the autumn. It is a native of the Pyrenees.

The figure in our plate is taken from a plant kindly forwarded by Messrs. Backhouse and Son, of York.

The order to which *Merendèra* belongs *(Melanthàceæ)* consists of bulbous, tuberous, or fibrous-rooted herbaceous plants, extremely variable in appearance. In some the flowers are inconspicuous, and of a dull green, while others have white or purple flowers. All the species have a poisonous acrid juice, which is particularly active in the genera *Cólchicum* and *Veràtrum*. They are frequent at the Cape of Good Hope, not uncommon in Europe, Asia, and North America, and exist within the tropics of India and New Holland. The two best known genera of the order, *Cólchicum* and *Bulbocòdium*, are distinguished from the genus *Cròcus*, which they so strongly resemble in the appearance of their flowers, by the ovary being within the flower instead of below it, and by the flowers having three distinct styles, instead of one style and three stigmas. The bulbs of the *Cólchicum* are used in medicine. The root of *Veràtrum* is believed to have been the Hellebore of the ancients.



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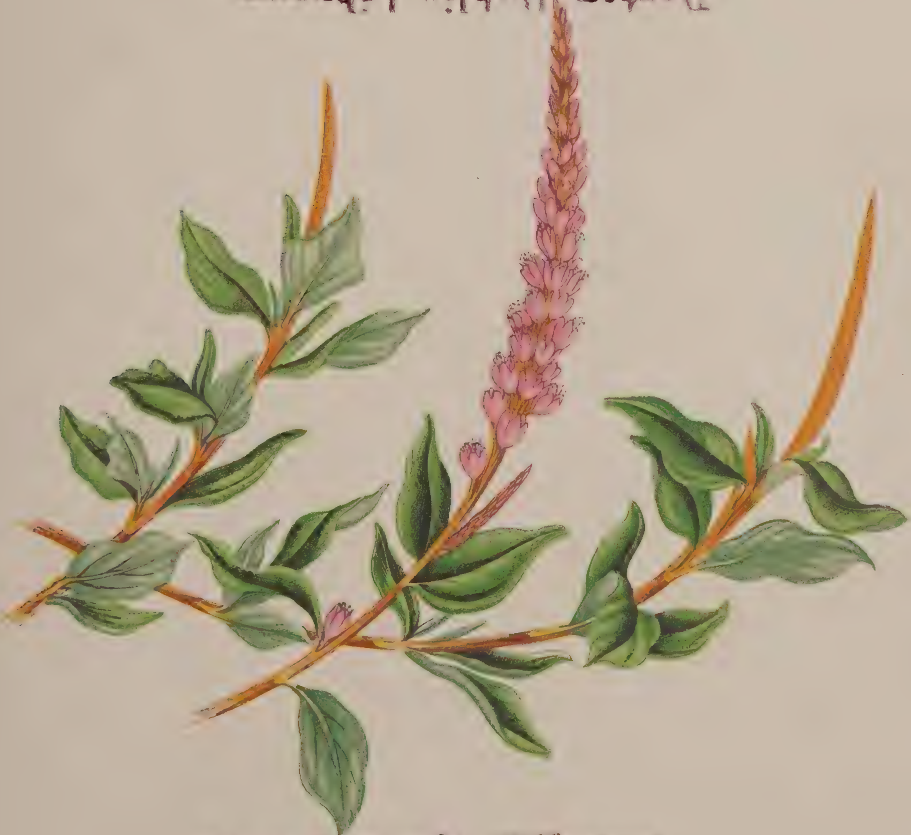

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MERENDERA BULBOCODIUM.

POLYGONUM VACCINIIFOLIUM.

XVI

POLYGONUM VACCINIIFOLIUM.

PLATE XVI.—FIG. II.

Poly'gonum vacciniifòlium, N. WALLICH. The Bilberry-leaved Bistort.
Natural Order—POLYGONACEÆ. The Buckwheat Family.

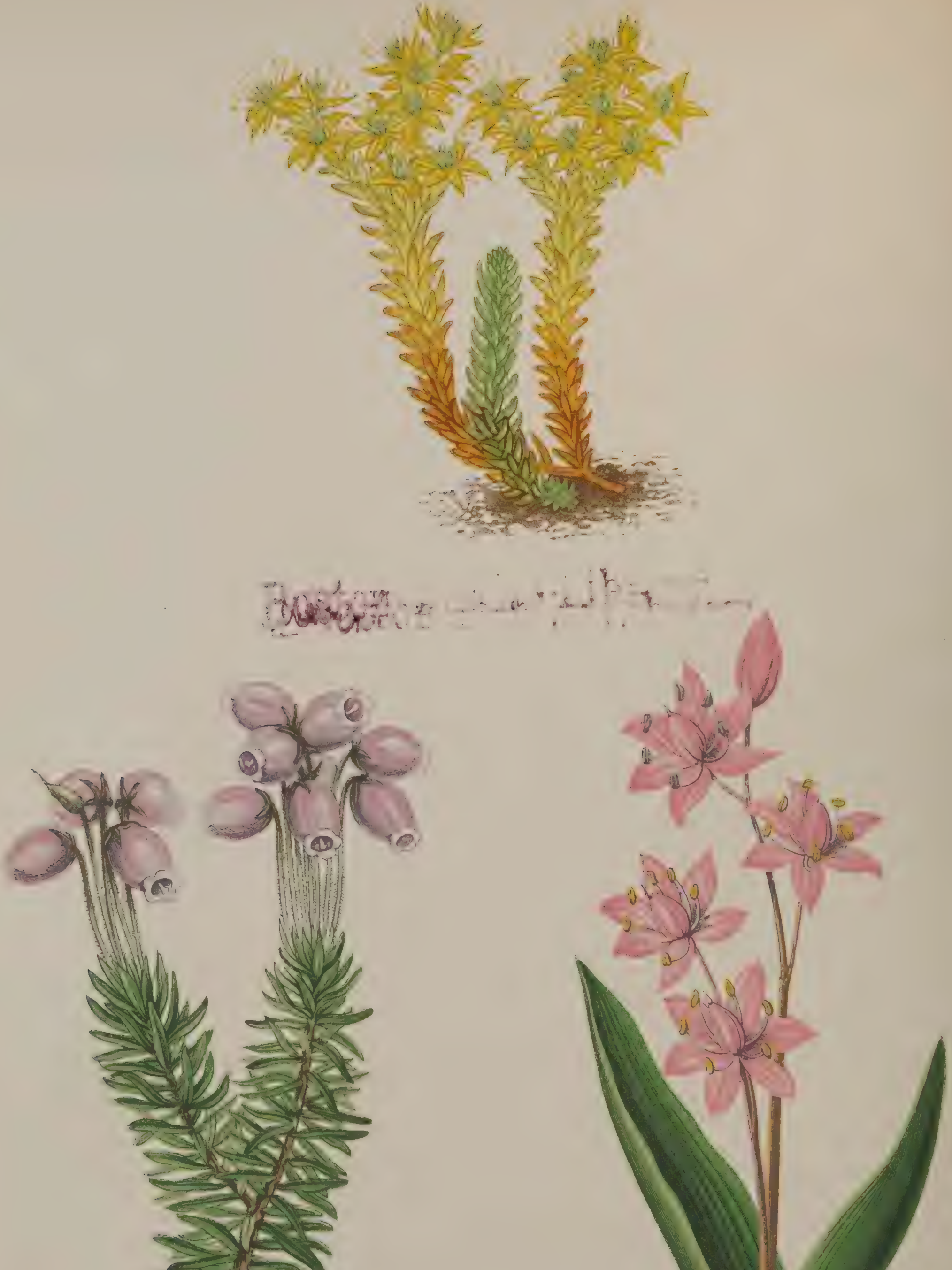
NEARLY all the species of *Poly'gonum* are common weeds of temperate climates. *P. Bistórta* (Snake's-weed), one of the British species, being one of the strongest vegetable astringents, might well be applied to the purpose of tanning leather, if it could be procured in sufficient quantity. The young shoots were formerly eaten in herb-puddings in the north of England, where the plant is known by the name of Easter Giant; and in the neighbourhood of Manchester they are said to be substituted for greens, under the name of Patience Dock. Another well known British species is the *P. Persicària,* very common in ponds and ditches. The seeds of *P. Fagopy'rum* (the Buckwheat) and *P. tatáricum* are used as food; and, according to Humboldt, the leaves of *P. híspidum* are used in South America as a substitute for tobacco.

The name of *Poly'gonum* is from *polys*—many, and *gonu*—a knee, or joint, in allusion to the numerous joints of the stem.

The pretty bright pink-flowered species figured in our plate *(P. vacciniifòlium)* is a native of the mountains of the north of India, whence it was introduced in 1845. Dr. Royle says it grows at an elevation of from seven to thirteen thousand feet, which appears to be the greatest elevation at which plants of the kind occur in India. It is, therefore, perfectly hardy in this country, living without protection even in low damp situations, provided it is placed among stones, so that no wet may lodge about it in winter. It is particularly suitable for planting on banks sloping to the south or west, or on rockwork, requiring, however, to be kept clear of all neighbouring plants that may be likely to choke it up. It forms a little flat loose bush, through which the air and light pass partially; and in the early autumn it produces an abundance of its gay rosy spikes of flowers. The plant is easily propagated by cuttings put into sandy loam or peat in the month of August, beneath a hand-glass.

I am indebted to Messrs. Backhouse and Son for kindly forwarding the plant from which the figure in the plate is taken.

The Buckwheat family *(Polygonàceæ)* consists of herbaceous plants or under-shrubs, with fleshy leaves, which are usually found growing in ditches, hedges, waste grounds, and in other situations in most parts of the world. Many of the plants are very common weeds in this country, as the Docks and several of the species of *Poly'gonum.* Two other well-known plants of the order are the Rhubarb *(Rhèum)*, and the Sorrel *(Rùmex Acetòsa)*.



SEDUM SEXANGULARE.

MENZIESIA CÆRULEA. SCILLA BIFOLIA RUBRA.

XVII

SEDUM SEXANGULARE.

PLATE XVII.—FIG. I.

Sèdum sexangulàre, LINNÆUS. The Six-angled, or Tasteless Stonecrop.
Natural Order—CRASSULACEÆ.* The Crassula Family.

THE flowers of this species (which are produced in cymes) are of a pale yellow, and resemble those of *Sèdum àcre* (the Biting Stonecrop, or Wall-Pepper), of which, indeed, it is considered by some to be only a variety. The plant, however, is readily distinguished by the form and insertion of the leaves, and by their not being so acrid as those of *S. àcre*. It is a perennial, flowering in July and August; and it is found on old walls and on sandy ground, chiefly in the eastern and south-eastern counties of England, more particularly in Kent, Essex, and Cambridgeshire. As a wild plant, however, it is somewhat rare: it is said that it no longer exists on Greenwich Park wall, the habitat given by Curtis in his "Flora Londinensis."

Like most of the other kinds of Stonecrop, this species is very suitable for planting on rock-work.

The figure in our plate is taken from a plant obligingly forwarded by Messrs. Backhouse and Son, of York.

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* The character of the order *Crassulàceæ* will be found in page 6.

MENZIESIA CÆRULEA.

PLATE XVII.—FIG. II.

Menzièsia cærùlea, Sir J. E. Smith. The Blue, or Scottish Menziesia.
Natural Order—Ericaceæ.* The Heath Family.

This is a small, much-branched, trailing, evergreen, heath-like shrub, with crowded leaves, which are linear, green on both sides, and bordered with minute, glandular teeth, scarcely visible without the aid of a magnifying glass. The flowers are of a purplish blue,† and they are produced in June and July on long pedicels, and clustered three or four (or more) together in very short terminal racemes or umbels. The corolla is four or five lines in length, with five very short lobes. There are ten stemens. The capsule is five-celled.

This elegant little plant is found on mountain heaths in northern and arctic Europe, Asia, and North America, and in the Pyrenees: in Britain, only on the mountain called the Sow of Athol, in Perthshire, where it is becoming exceedingly rare, if, indeed, it is not already extinct. It should be grown in heath-mould, and it is easily propagated by layers.

Like *Menzièsia polifòlia* (see p. 45), this species has received several names: Linnæus called it *Andrómeda cærùlea;* Pallas, *A. taxifòlia;* and Willdenow, *Erìca cærùlea;* while Salisbury placed it with another species *(M. empetrifórmis)* in the new genus *Phyllódoce,*‡ and called it *P. taxifòlia* (the Yew-leaved Phyllodoce).

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* The character of the order *Ericàceæ* is given in page 23.

† The flowers of this species, as found in North America, are, on the authority of Pursh, said to be red.

‡ *Phyllódoce*, the name of one of the attendant nymphs of Cyrene, a daughter of Hypseus, King of Thessaly, who, whilst bathing in the river Peneus, was carried off by Apollo (who had become enamoured of her) into Lybia, where she became the mother of Aristæus.

SCILLA BIFOLIA RUBRA.

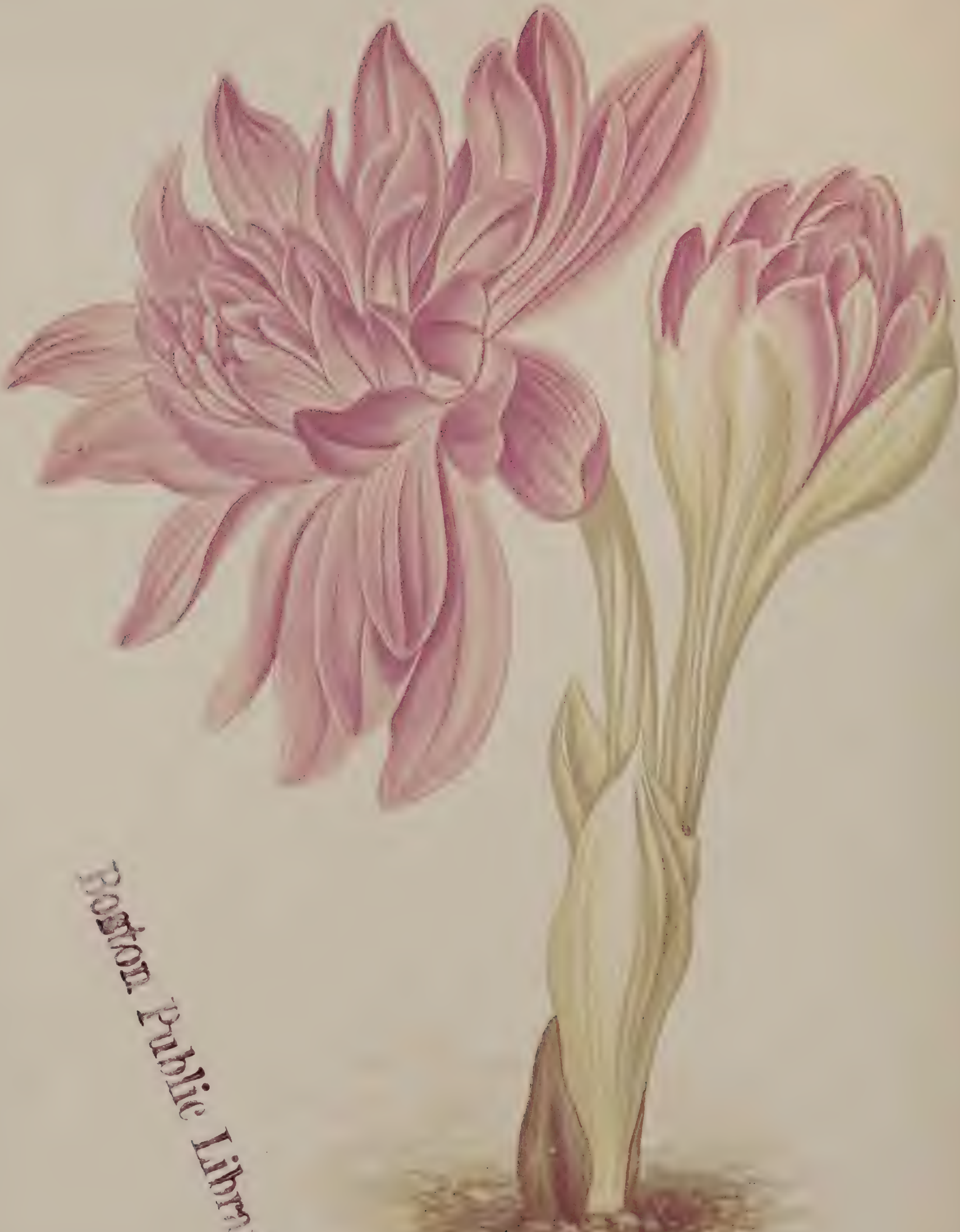
PLATE XVII.—FIG. III.

Scílla bifòlia rùbra, Ker. The red-flowered two-leaved Squill.
Natural Order—Asphodelaceæ. The Asphodel Family.

Scílla is an extensive genus of very ornamental bulbous plants, nearly all of which are quite hardy in British gardens: two are natives of Britain, viz. *S. vérna* and *S. autumnàlis.* Some of the species have campanulate or bell-shaped flowers; while in others, the flowers are rotate, or round and spreading. A soil composed of rich fibrous loam and sand is most suitable for them; and they are readily increased by offsets from the bulbs. The derivation of the generic name has not been exactly determined: by some it is supposed to be derived from *skyllo,* to injure, in allusion to the roots being very poisonous; while others think that *scilla* has rather been obtained from *ásqyl,* the Arabic name for the plant.

S. bifòlia is a very pretty plant, sometimes found wild in England, but not now regarded as truly native. The species has blue flowers; but there are several varieties, one of which has white flowers (*S. bifòlia álba,* Willdenow), while another (that figured in our plate) has pretty bright pink flowers. This last is the *S. b. rùbra* of Ker (probably the *S. ròsea* of Lehmann; the *S. cárnea* of Sweet). Both the species and the varieties are of the easiest culture, and when once planted will flower freely every spring without much further care.

The order to which *Scílla* belongs (*Asphodelàceæ*) consists of herbaceous plants, shrubs, or trees, with bulbous, tuberous, or fibrous roots, uncommon in tropical countries, very abundant in temperate latitudes, and not unfrequent in the cooler regions of the world. Many of these plants have tunicated bulbs, that is, bulbs consisting of several fleshy tunics, or coats, which may easily be separated from each other, as may be seen in the hyacinth and the onion. The leaves are fleshy, and ligulate or strap-shaped; and the stems are frequently hollow. The flowers are generally in upright racemes or umbels; they are regular and sometimes bell-shaped: the perianth is divided into six segments, which are sometimes partly united into a tube, and recurved at the tip. There are six stamens attached to the perianth; and the fruit is either a fleshy or a dry three-celled capsule, generally with several seeds, and opening into three valves when ripe. The order contains many well-known plants besides *Scílla* (the Squill), as, for example, the Hyacinth (*Hyacínthus*), the Onion (*A'llium*), the Grape Hyacinth (*Muscàri*), the Star of Bethlehem (*Ornithógalum*), and the Asparagus. While other genera not generally so well known as those already mentioned are: *Asphódelus* (the Asphodel), *Anthéricum*, *Albùca*, *Gàgea*, *Lachenàlia*, *Triteleìa*, *Dracæ̀na* (the Dragon Tree), *Phórmium* (the New Zealand Flax), and *Thysanòtus* (the fringed Violet of New Holland), which has rich purple flowers with long delicate fringes which sparkle in the sun and look as if continually bedewed with minute particles of water.



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COLCHICUM AUTUMNALE FLORE-PLENO.

XVIII

COLCHICUM AUTUMNALE FLORE-PLENO.

PLATE XVIII.

Cólchicum autumnàle flòre-plèno. The double-flowered autumnal Meadow Saffron, or Autumnal Crocus.

Natural Order—MELANTHACEÆ.* The Melanthium Family.

THE species contained in the genus *Cólchicum* so strongly resemble the different kinds of *Cròcus*, that by most ordinary observers the difference which exists will hardly be distinguishable. On examination, however, it will be found that the genera differ in the number of the stamens (for while in *Cròcus* there are only three, in *Cólchicum* there are six); in the ovary being within the flower in *Cólchicum* instead of below it, as in *Cròcus;* and in *Cólchicum* having three distinct styles, instead of one style and three stigmas, as in *Cròcus.* It will also be found that many more flowers are produced from each bulb of the *Cólchicum.* All the species are ornamental, suitable for growing in mixed borders or as edgings to beds in pleasure-grounds and shrubberies, and thriving best in a deep rich loamy soil: they are increased by offsets from the bulbs or by seeds. They all possess medicinal properties, and are poisonous if used to excess. The name of *Cólchicum* is derived from Colchis, where the plant grows in abundance.

C. autumnàle (the common Meadow Saffron) grows plentifully in moist rich meadows and pastures in several parts of England. It is valuable in gardens, as it produces a large number of its fine purple flowers in succession through September and October; but it has rather a naked appearance, as the leaves and the fertilized seed-bud do not appear above ground until the following spring. The flowers, which arise with very long slender tubes from the root, die off towards the end of October, without leaving any external appearance of seeds. These lie buried all the winter; in spring they grow up on a fruit-stalk, and are ripe about the time of hay-harvest.

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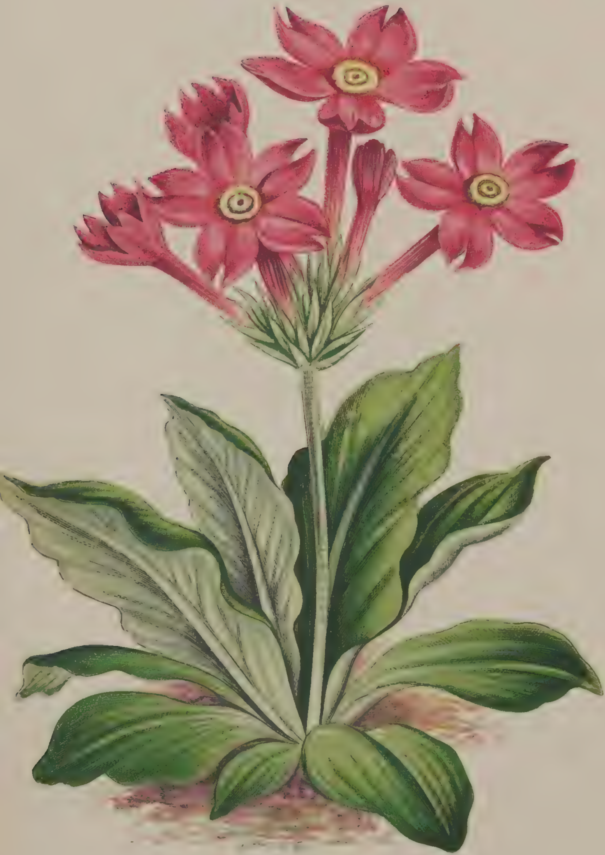
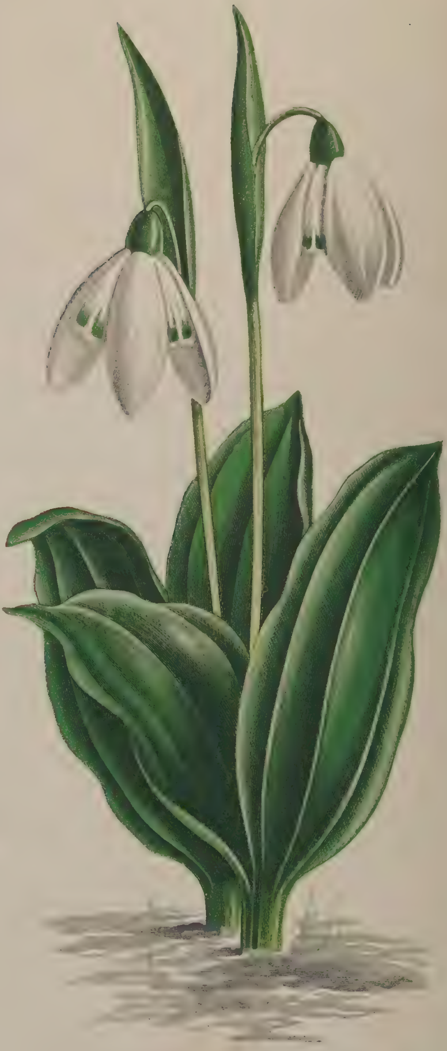
* The description of the order *Melanthàceæ* will be found in page 52.

As a medicinal plant this species of Cólchicum has been known since the days of Hippocrates. It is much used in cases of gout and rheumatism, as, in allaying the pain, it is considered to possess a specific property; and it is said to be the basis of the celebrated *eau médicinale* of the French. As serious accidents have followed the incautious use of Meadow Saffron, great care is necessary: a few years ago a woman was poisoned by the sprouts of Cólchicum roots, which had been thrown away in Covent Garden Market, and which she mistook for onions. The Hermodactyls of the Arabians, formerly so celebrated for soothing pains in the joints, were corms (bulbs) of the *Cólchicum variegàtum*, a species found in the Mediterranean, and sometimes grown in this country under the name of *C. autumnàle*, but readily distinguished by the flowers being very regularly mottled with dark purple spots, and by the leaves being much larger.

There are several varieties of *C. autumnàle*, most of which have purple flowers, but one *(C. a. álbum)* has white flowers. For an opportunity of figuring the beautiful double-flowered variety which I have given, I am indebted to Messrs. Backhouse and Son, of York.





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PRIMULA LONGIFLORA.

GALANTHUS PLICATUS.

XIX

PRIMULA LONGIFLORA.

PLATE XIX.—FIG. I.

Prímula longiflòra, Allioni. The long-flowered Primrose.
Natural Order—Primulaceæ.* The Primrose Family.

This very pretty Primrose is a native of the Alps of Switzerland, and other parts of Europe, and though it was introduced in 1818, it is still somewhat rare in this country. It resembles the beautiful little Bird's-eye Primrose (*P. farinòsa*) in several particulars, but it is much larger than that species. Allioni, in comparing it with *P. farinòsa*, says, the leaves are less mealy, and less deeply toothed; the scape is higher, and there are fewer flowers in the umbels, with the leaves of the involucre longer, and the tube of the corolla three times as long.

This may be regarded as a very desirable Primrose either for growing in pots (which should be well-drained), or in a shady situation on rockwork, the soil most suitable for it being a mixture of loam and sandy peat. It produces its bright red flowers from April till July. Though it may sometimes be increased by offsets, yet, as these are only sparingly produced, the better way is by seeds, if they can be procured.

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* The character of the order *Primulàceæ* will be found in page 14.

GALANTHUS PLICATUS.

PLATE XIX.—FIG. II.

Galánthus plicàtus, Bieberstein. The plaited, or Russian Snowdrop.
Natural Order—Amaryllidaceæ. The Amaryllis Family.

The Common Snowdrop, which Mrs. Barbauld appropriately calls the

> "First pale blossom of the unripened year,"

is almost universally known and prized; but many, perhaps, have failed to notice that the outer divisions of the flower, which are of a snowy whiteness, are the sepals of the calyx, while the petals are the short scale-like bodies, bordered and striped with green, which form the inner part. Thus, when the flowers become double, it is only in the inner part, from the stamens (as is always the case with double flowers) being changed into petals.

There are only three species of *Galánthus,* viz.: *G. nivàlis* (the common Snowdrop), which is found wild in England in woods and shady dells; *G. plicàtus* (figured in our plate), which is a native of Russia; and *G. refléxus,* which is a native of the Levant, and has green flowers.

The generic name is derived from two Greek words *(gala* and *anthos),* signifying milk-flower, in allusion to the milky whiteness of the flowers.

The bulb of *G. plicàtus* (the Crimean Snowdrop) is much larger than that of the common species, but the flower is smaller. The leaves are much broader than those of the common kind, and they are curiously folded at the edges, whence the specific name of *plicàtus,* which signifies plaited or folded. This species is a native of Russia, and though it was introduced many years ago, it is not yet very generally found in our gardens. It flowers from January till April, and should be grown in sandy loam.

The order to which the Snowdrop belongs *(Amaryllidàceæ)* is a large one, and consists of bulbous-rooted plants, most of which have very lovely flowers, varying very much in colour. In fragrance many of them vie with the violet and the primrose. Some of the species are natives of thickets in the cooler regions of Europe and Asia; others are found deep-rooted in the burning shores of islands where scarcely a blade of grass interposes itself between them and the rays of a scorching sun; many spring up in the gloomy, damp, and sultry woods of equinoctial America; and another set intermingles with the Ixias and Gladioluses of Southern Africa.

Galánthus is the best known genus of the order. Other genera are, *Leucòjum* (the Snowflake), *Ixiolírion, Amary'llis, Hippeástrum, Vallòta, Nerìne,* one species of which *(N. sarniénsis)* is the Guernsey Lily, *Brunsvígia, Crìnum, Hæmánthus,* (the Blood-Flower), *Phædranássa, Pancràtium, Narcíssus,* one species of which *(N. Pseùdo-Narcíssus)* is our English Daffodil, *Alstrœmèria, Clívia,* and *Doryánthes.*

The different kinds of *Amary'llis* have large lily-like flowers, divided into six equal segments, which are joined into a tube below, with six stamens, the anthers of which are turned towards the pistil, and a long style crowned with a simple stigma. The ovary is beneath the other parts of the flower, to which it serves as a receptacle; and in most of the plants it looks like a small green calyx below the perianth. The leaves are very long, and they are rather thick and fleshy. In *Narcíssus, Pancràtium,* and some other genera, the flowers have a kind of cup within the perianth, formed by the filaments of abortive stamens having grown together. In *Pancràtium,* the filaments of the anther-bearing stamens grow into the others, so as to form a part of the cup, the anthers springing from the margin of it; but in *Narcíssus,* the fertile stamens are distinct. In *Galánthus,* and in the genera nearly allied to it, the anthers open by pores, as in the *Ericàceæ* (the Heath Family); and there is a kind of receptacle on the ovary, in which the petals and sepals and the filaments of the stamens are inserted.

SCUTELLARIA ALPINA.

PLATE XX.—FIG. I.

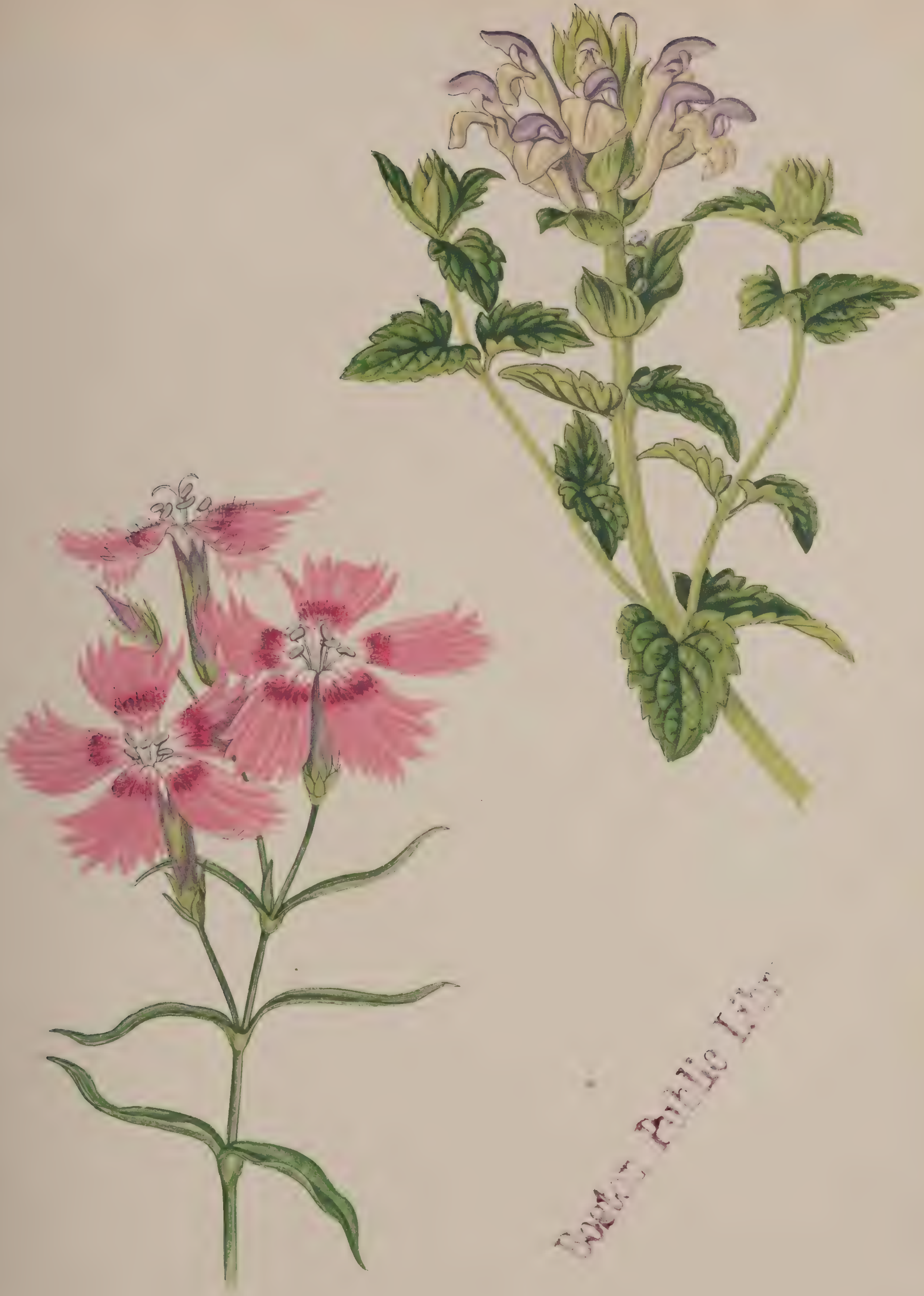
Scutellària alpìna, Willdenow. The Alpine Skull-cap.
Natural Order—Labiatæ. The Labiate Family.

Nearly all the species of *Scutellària* are ornamental perennials, very suitable for planting in the mixed border of the flower garden, as they produce a striking effect when in flower. The plants will grow in any common garden soil, and they are readily increased by seeds or by division. A few of the species require the protection of a greenhouse or a frame in the winter. The generic name is from *scutella,* a little saucer, in allusion to the form of the calyx.

S. alpìna is a native of Hungary, and other parts of the continent, whence it was introduced in 1752. In this country it is quite hardy, and produces its very pretty flowers from June to August, and sometimes even till October. Though the plant seldom exceeds six or nine inches in height, the branches spread round to a considerable distance, so that it will require to be cut back in winter, to keep it within bounds. It will grow in rather a shady situation, where many plants that are more tender will not thrive. It is readily increased either by dividing the root, or by seeds, which ripen plentifully. There are two or three varieties of this species: one *(S. a. sanguìnea)* has dark red flowers; and another *(S. a. variegàta)* has pale yellow flowers.

The figure in our plate is taken from a plant obligingly forwarded by Messrs. Backhouse and Son.

The order *Labiàtæ* (to which *Scutellària* belongs) consists of herbaceous plants or undershrubs, mostly natives of extra-tropical countries, although some are found in the hottest parts of the world. Many have extremely odoriferous leaves, as the Mint, the Sage, the Thyme, and other aromatic plants used in cookery; and some bear handsome flowers, which, in some of the plants, are disposed in a whorl round the stem,



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DIANTHUS CAU[illegible]. [illegible] ALPINA.

XX

as is the case with the Dead Nettle (*Làmium*). The flowers are distinguished by a tubular, bilabiate corolla, with a projecting under lip. In some of the plants the corolla is ringent (gaping). There are four stamens, two of which are longer than the others; and the cells of the anthers differ from those of most other plants in spreading widely apart from each other, each being joined to the filament only at the tip. The pistil consists of four distinct carpels, a very long style lobed at the tip, and furnished with a very small stigma at the tip of each lobe. The plants are all remarkable for their tonic, cordial, and stomachic virtues: they contain both a bitter and an aromatic principle, in different proportions. The bitterness, which is given out in decoctions, resides in a gum-resinous secretion, abounding in some of the species which are used as stomachics; while the aromatic principle is due to the presence of an essential oil, in which some of those abound which are used as stimulants. From the different degree of combination of these principles in different plants, they are found useful in various ways, some being used for seasoning food, and others for perfumes. The essential oil of all contains camphor, which exists in some quantity in rosemary, sage, and lavender.

The following are some of the best known of the *Labiàtæ: Méntha* (the Mint), *Perílla, Thy`mus* (the Thyme), *Oríganum* (the Marjoram), *Hyssòpus* (the Hyssop), *Teùcrium* (the Germander), *A'juga* (the Bugle), *Rosmarìnus* (the Rosemary), *Làmium* (the Dead Nettle), *Glechòma* (the Ground Ivy), *Marrùbium* (the Horehound), *Lavándula* (the Lavender), *Melíssa* (the Balm), *Prunélla* (the Self-heal), *Sálvia* (the Sage,) *Còleus* (of which several kinds with very beautifully variegated leaves are now common in our gardens), *Plectránthus,* and *Pogostèmon* (one species of which furnishes the celebrated Patchouli, or Puchá-pát).

DIANTHUS CAUCASICUS.

PLATE XX.—FIG. II.

Diánthus caucásicus, BIEBERSTEIN. The Caucasian Pink.
Natural Order—CARYOPHYLLACEÆ.* The Pink and Carnation Family.

THE great beauty and the delightful fragrance of the flowers of most of the species of *Diánthus* almost justify the name given by Linnæus to the genus, which signifies divine flower, or the flower of God (from *Dios*, divine, and *anthos*, a flower). The species are numerous, and are divided into several sections: some are annuals, some perennials, and some are even shrubby; some have the flowers in close clusters, as in the Sweet William *(D. barbàtus)*; and others have the flowers few, or many and loosely panicled. The leaves are of a glaucous colour: they are small, and have their veins in parallel lines like a monocotyledonous plant, only the midrib being conspicuous. The veins of the petals, however, are reticulated. The calyx, which is tubular, is surrounded by a number of what are called calycine scales: in most of the species these scales lie close together, like tiles on the roof of a house; but in the Sweet William, and the species nearly allied to it, they are lengthened into sharply-pointed leafy bracts.

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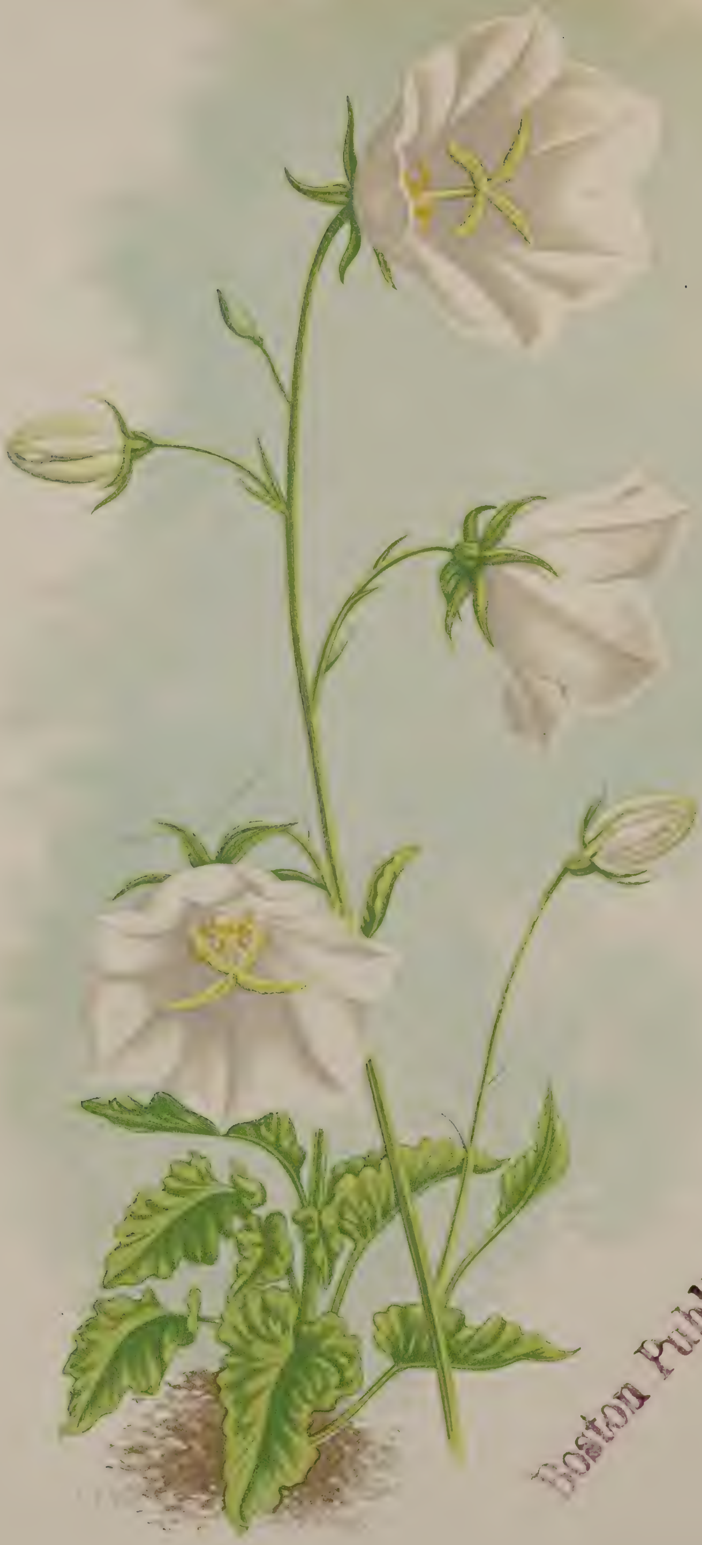
* The character of the order *Caryophyllàceæ* will be found in page 1.

The perennial species, being evergreen, look as green in winter as in summer. The rarer kinds should be grown in pots, so that they may be protected in winter. A light loamy soil, mixed with decayed leaves and sand, will be found most suitable for all these plants; and they are readily increased by seeds, layers, cuttings, and division of the roots. The seeds of the annual and biennial kinds may be sown in the open ground.

D. caucásicus was introduced from Mount Caucasus in 1803. It is a hardy perennial, flowering in July and August, and generally propagated by layers. The flowers have the petals so deeply cut at the margin as to appear almost fringed. The leaves are small, deeply-keeled, and very glaucous.



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CAMPANULA CARPATICA β ALBA.

XXI

CAMPANULA CARPATICA β ALBA.

PLATE XXI.

Campánula carpática β álba, A. Pope. The White-flowered Carpathian Bell-flower.
Natural Order—Campanulaceæ.* The Bell-flower Family.

Campánula carpática was sent to the Royal Gardens at Kew by Baron Jacquin of Vienna in 1774. As the specific name implies, it is a native of the Carpathian Mountains in Hungary, and it is quite hardy in this country, growing to the height of six inches or a foot, and producing large showy blue flowers during the months of June, July, and August. It is a very suitable plant for the mixed border, for beds in a flower-garden, for edgings, or for rockwork. It is readily increased by dividing the roots in the autumn, or it may be raised from seed. There are two or three varieties of this species, the most pleasing of which is that with white flowers *(C. c. β álba),* figured in our plate.

The figure on our plate is taken from a plant kindly forwarded by Messrs. Backhouse and Son, of York.

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* The character of the order *Campanulàceæ* will be found in page 8.

CROCUS BORYANUS.

PLATE XXII.—FIG. I.

Cròcus Boryànus, GAY. M. Bory de St. Vincent's Crocus.
Natural Order—IRIDACEÆ. The Iris Family.

*Cròcus** is a genus of ornamental stemless herbaceous plants, proceeding from solid bulbs or corms, with narrow linear leaves, and large showy flowers, which rise directly from the corms, and appear before the leaves. The species are natives of Europe and Middle Asia. Though most persons who are at all fond of flowers must know that there are several kinds of Cròcus, very few, perhaps, are aware that there are a great many named species sufficiently distinct to be easily distinguished, and that the garden varieties of Cròcus are so numerous that it would be rather tedious to give a list of them. All the different kinds may be classed in two divisions, viz., those that flower in spring, and those that flower in autumn. Those forming the first division are the most numerous, and are of great value in the flower-garden, for planting in beds, and as edgings, on account of the early season of flowering, and the brilliancy of the flowers. All the species and varieties will grow well in any light sandy soil, and they may be increased by offsets or by seeds.†

When the Crocus is in flower, the ovary is situated underground, almost close to the bulb, but some weeks after the decay of the flower, it emerges on a white peduncle, and ripens its seeds above ground. This peculiarity is especially conspicuous in *C. nudiflòrus*, which flowers without leaves in the autumn, and throws up its ovary the following spring, like the Cólchicum.

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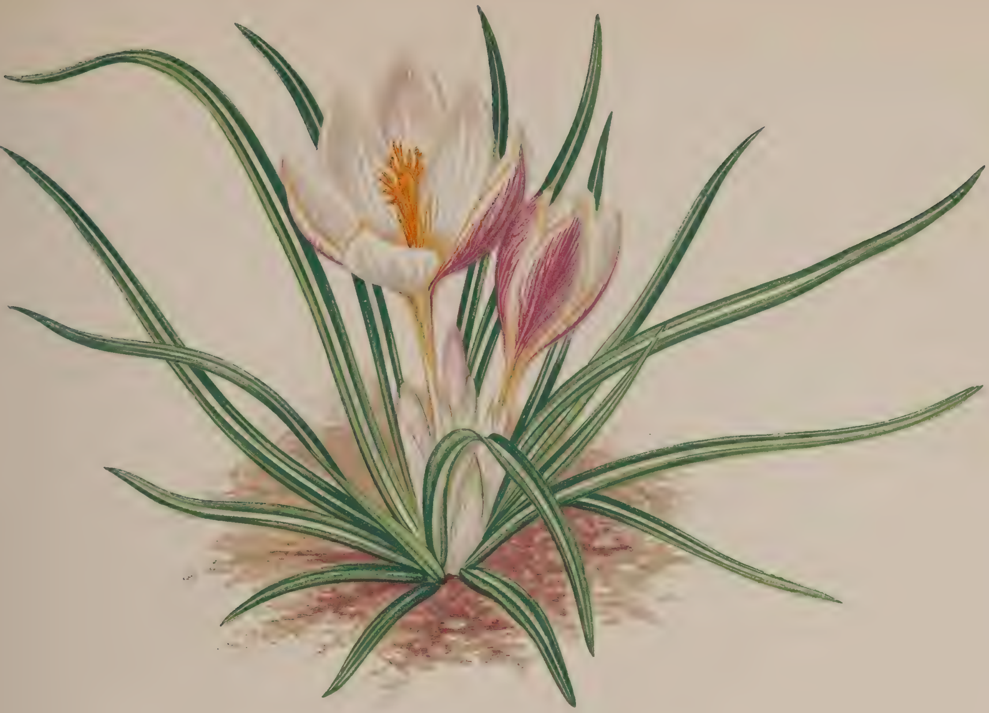
* A Chaldean name, applied by Theophrastus. The story of the youth Crocus being turned into this flower, may be read in Ovid's *Metamorphoses*.

† It has been found that the blue, purple, and white-flowered kinds ripen their seeds much more readily than the yellow. The seeds should be sown in light earth immediately after being gathered.



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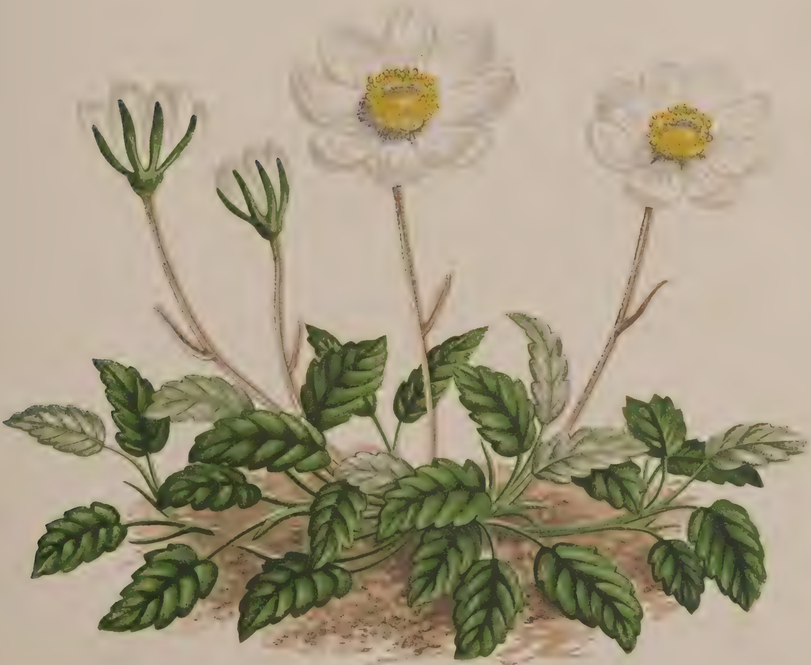

CROCUS BORYANUS.
DRYAS OCTOPETALA.
XXII

The bulbs of the Cròcus being renewed every year, and the new bulb formed on the top of the old one, it follows that at whatever depth they may have been originally planted, they will in a short time rise to the surface. Cròcus bulbs should, therefore, be taken up every third year, after the leaves decay, dried in the shade, parted, and replanted, three inches deep, not later than Michaelmas.

The pretty *C. Boryànus* flowers in the autumn, but it is not very commonly seen in our gardens. In the volume of the "Botanical Register" for 1847, the late Honble. and Very Revd. W. Herbert (sometime Dean of Manchester) stated that it "was so insufficiently described by Gay and Bory, that it could not be identified from their descriptions. The most striking feature (the milk-white anthers) was overlooked, and I found the only mode of identifying it was to send a person to Navarino, to seek the plant where Bory found it. I am now able to state that *C. Iónicus*, and *C. véneris** of Tappeiner, are one with *C. Boryànus*. In Corfu, the plant is poorer, and has much smaller flowers; it improves in St. Maura, but those from the red earth of the Morea are much more vigorous; and I have it from the neighbourhood of Coron, with the limb above two inches long, while in the Corfu plant it scarcely exceeds one. It was found near Navarino, Modon, Coron, on Mount Evan, Mount Ithome, and the lower hills of Taygetus, and near Zeitun, and on Mount Scopo, in Zante. The collector of the Unio found it on Mount Enos, I conclude near the base towards the sea. I did not see it in Cephalonia."

The Cròcus is placed in the order *Iridàceæ*, a family of fibrous, bulbous, or tuberous-rooted perennial plants, with very beautiful fugitive flowers, principally natives of the Cape of Good Hope, or of the middle parts of North America and Europe, and more remarkable for their beauty than for their utility. The leaves are generally long and flat, with the edge towards the stem. The flowers are produced in spathes: the perianth is in six petal-like segments coloured alike, the calyx and corolla being in most cases confounded together. Some of the principal genera besides *I`ris* (the type of the order) and *Cròcus* are, *Morœ`a*, *Márica*, *Homèria*, *Sisyrínchium*, *Reneálmia*, *Patersònia*, *Witsènia*, *Ferrària*, *Tigrídia*, *Herbértia*, *Babiàna*, *Watsònia*, *Antholy`za*, *Gladìolus*, *Sparáxis*, *Tritònia*, *I'xia*, and *Trichonèma*.

The Iris has generally tuberous or solid bulbous roots, of the kind called corms; and the perianth of the flower is divided into six segments, three of which are larger than the others: these three larger segments, which form the calyx, are reflexed, and a stamen springs from the

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* [And also the *C. cáspius* of Fischer.]

base of each, which reclines upon it, with its anther turned from the rest of the flower, the segment, in many of the species, having a kind of crest or beard near the base, as though it were intended to form a cushion for the stamen to repose on, while over each stamen is spread, as a kind of coverlid, a stigma, which is dilated so as to resemble a petal. The petals often stand erect. The seed-vessel, which forms below the flower, is a three-celled capsule, opening, when ripe, by three valves, and containing numerous seeds.

The other genera differ from the Iris in having the lower part of the segments of the perianth generally combined into a tube, with the ovary below looking like a footstalk, the limb being divided into six parts, all so much alike, both in form and position, as to render it difficult to distinguish the calyx from the corolla. There is only one style, with three stigmas, which are always more or less leafy; and the anthers (which are never more than three) are always turned away from the pistil. In the genus *Ferrària*, the filaments of the stamens grow together, and form a hollow tube (as in the Passion-flower) surrounding the style and stigmas; and in *Cròcus sativus* (the Saffron Crocus), the stigmas (which, when dried, form the saffron*) are so heavy, as to hang out on one side of the perianth from between the segments. Though most of the genera have solid bulbs or corms at the base of their stems, some, such as *Márica*, *Sisyrínchium*, and *Patersònia*, have only fibrous roots.

The figure on our plate is taken from a plant kindly forwarded by Messrs. Backhouse and Son, of York.

DRYAS OCTOPETALA.

PLATE XXII.—FIG. II.

Dry'as octopétala, LINNÆUS. The Mountain Avens.
Natural Order—ROSACEÆ. The Rose Family.

THE two or three known species of *Dry'as* are small herbaceous or half-shrubby creeping perennials with simple rigid leaves, natives of the high mountains or Arctic regions of Europe, Asia, and North

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* The valuable colouring matter of Saffron has the singular property of entirely disappearing under the influence of the sun's rays.

America. The generic name has been poetically applied to these pretty little plants from the resemblance of the leaves to those of the oak, which was sacred to the Dryads.

D. octopétala is a British plant, frequently found in the mountain-districts of the north of England, and very abundant in the north of Scotland. It is also found in Ireland. The woody, much-branched, prostrate, or creeping stems strike root at intervals, and often form patches of several feet in extent. The leaves are shining above, and white and downy underneath. The flowers, which appear in June and July, are white, and are large and showy, the stamens, which have yellow anthers, being very numerous and forming a dense tuft. The fruit has a feathery appendage about an inch in length. A moist peaty soil is most suitable for this very desirable rock-plant, which may readily be increased by seeds, by cuttings, or by division of the root. There is a variety *(D. o. mìnor)* which has a more compact habit and smaller flowers than the species.

In the greater number of the plants contained in the order *Rosàceæ* (to which *Drỳas* belongs), the flowers have a calyx with five sepals, combined into a tube at their lower part, but divided above into five lobes; and a corolla, generally with five petals. The stamens, usually indefinite in number, are inserted with the petals on the calyx below its lobes. The ovary consists of one, two, or more carpels, usually distinct at the time of flowering, but sometimes combined even into a single five-celled ovary, which is then always inferior, or combined with the calyx. As the fruit enlarges, the carpels either remain free or are variously combined with each other or with the calyx. One or two seeds (or in the genus *Spiræ̀a* three or four) in each carpel. The leaves are alternate, generally compound, and almost always furnished with stipules. Most of the plants of the order are natives of the cold and temperate regions of the northern hemisphere.

Of the Rose (the type of the order), remarkable for its great beauty and delicious fragrance, there are a great many species (several being natives of Britain), and innumerable garden varieties. The order, indeed, is rich in beautiful hardy flowering trees and shrubs, as, in addition to the Rose, it contains the Hawthorn and all the other species forming the extensive genus *Cratæ̀gus*, and the genera *Spiræ̀a* and *Cotoneáster*.

Included in the order also are all the most important of our hardy fruits, as, for example, the Peach and Nectarine (*Amýgdalus*), the Apricot *(Armenìaca)*, the Plum *(Prùnus)*, the Cherry *(Cérasus)*, the Raspberry and Blackberry *(Rùbus)*, the Strawberry *(Fragària)*, the Apple and Pear *(Pỳrus)*, the Medlar *(Méspilus)*, and the Quince *(Cydònia)*.

SCUTELLARIA ALPINA β LUPULINA.

PLATE XXIII.—FIG. I.

Scutellària alpìna B lupulìna, GEORGE BENTHAM. The Hop-flowered Alpine Scutellaria, or Skullcap.
Natural Order—LABIATÆ.* The Labiate Family.

THIS very ornamental hardy, prostrate, herbaceous perennial is found in the south-eastern parts of Europe, and in Asiatic Russia. In habit and time of flowering, it corresponds exactly with *S. alpìna,* which has been already given (see page 64, and plate XX), but in our gardens it differs chiefly in its flowers being of a pale yellow, and in the flower-heads having a less disposition to elongate, so that the bracts have pretty constantly that compact arrangement to which the name hop-flowered owes its origin: the leaves are also generally larger, and more obtuse.

STENACTIS SPECIOSA.

PLATE XXIII. FIG. II.

Stenáctis speciòsa, LINDLEY. The Showy-flowered Stenactis.
Natural Order—COMPOSITÆ.† The Composite Family.

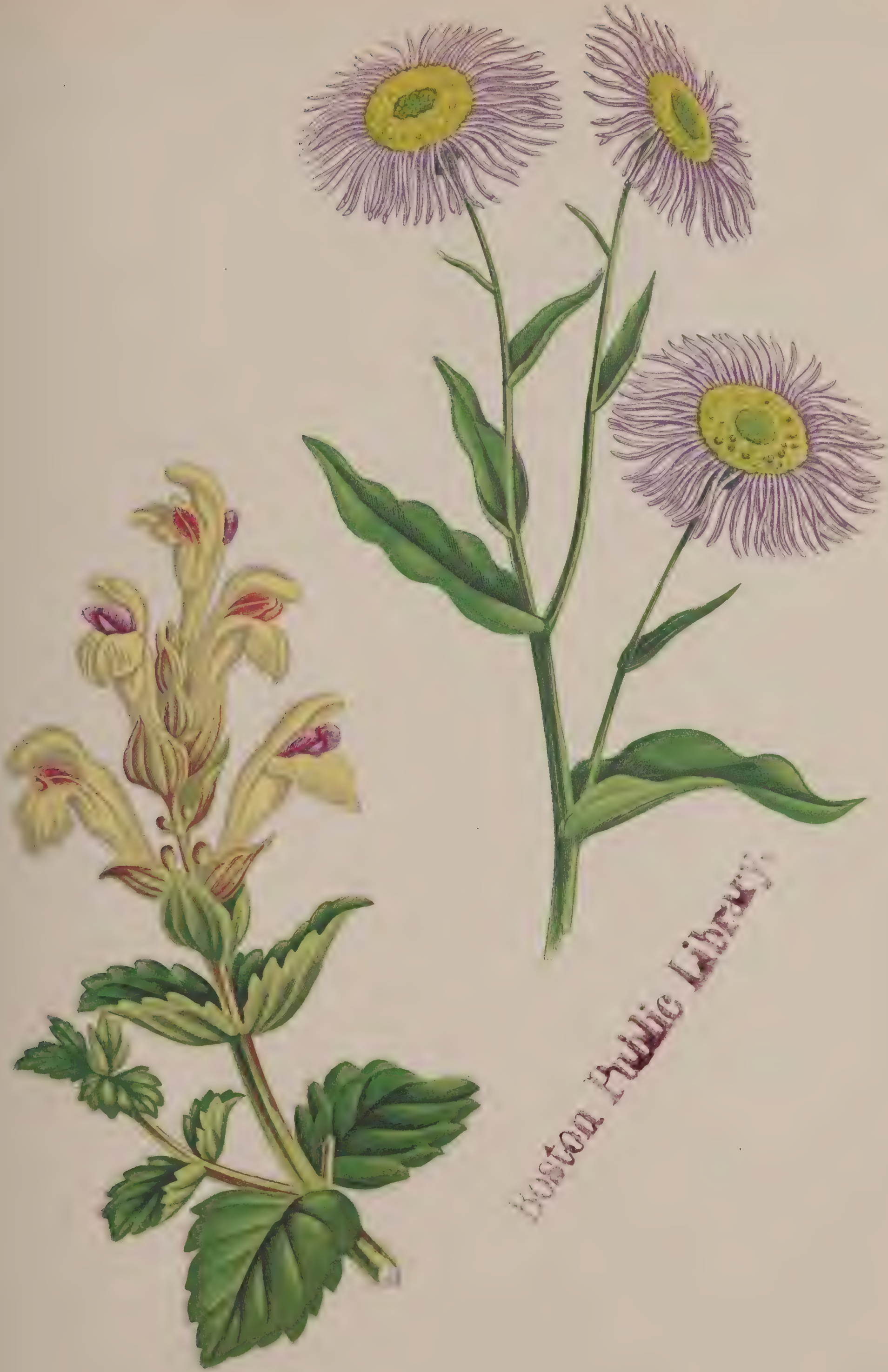
THE species forming the genus *Stenáctis* of Nees von Esenbeck, are included in *Erígeron*‡ by some botanists. The name of *Stenáctis* is probably from *stenos* narrow, and *aktis,* a ray, in allusion to the rays of the flower.

S. speciòsa grows to the height of eighteen inches or two feet, and produces numerous heads of flowers, which have a yellow centre and rather long pale purple rays. It is very suitable for planting in a mixed border.

[*] The description of the order *Labiàtæ* has been already given in page 64.

[†] The character of the order *Compósitæ* will be found in pages 16-18.

[‡] Though the British species of *Erígeron* (well known to persons residing in the country under the name of Fleabane) have no beauty to recommend them, some of the American species are well deserving of cultivation.



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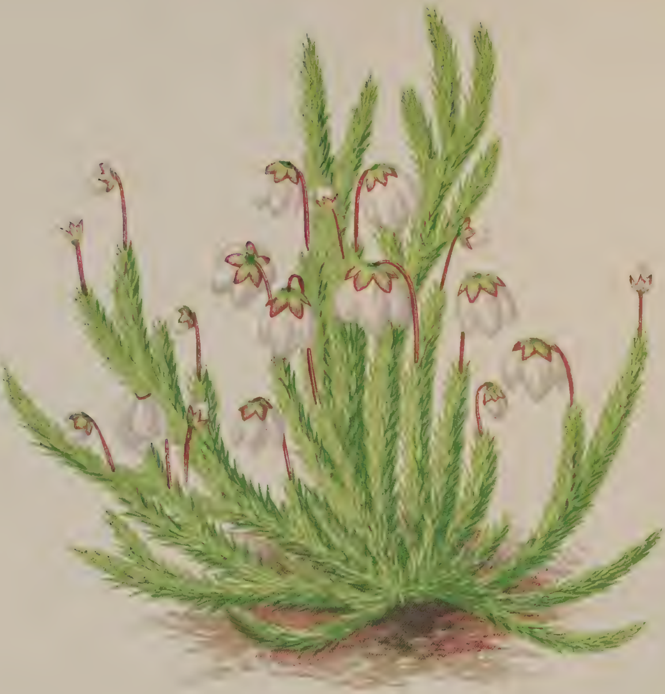
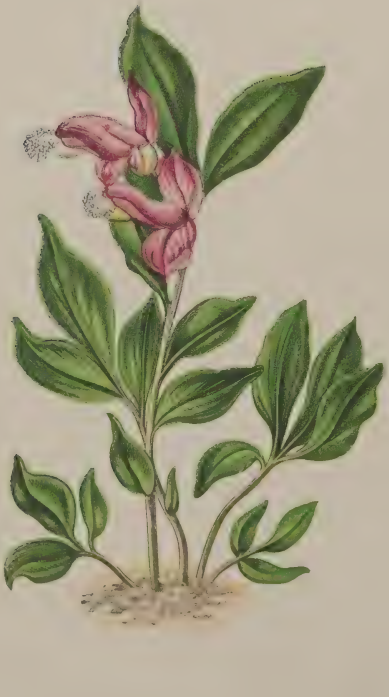
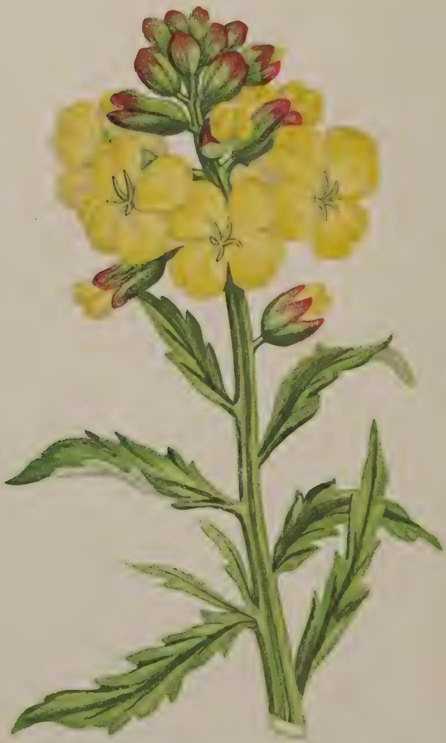
SCUTELLARIA ALPINA β LUPULINA. STENACTIS SPECIOSA.

XXIII







ANDROMEDA HYPNOIDES.

POLYGALA PAUCIFOLIA. CHEIRANTHUS ALPINUS.

XXIV

ANDROMEDA HYPNOIDES.

PLATE XXIV.—FIG. I.

Andrómeda hypnöìdes, Linnæus. The Hypnum-like Andromeda.
Natural Order—Ericaceæ.* The Heath Family.

The species comprised in the genus *Andrómeda* are very ornamental and interesting plants, growing best in peat earth, in a moist situation, and easily increased by layers or by seeds. The seeds should be sown in pots and very thinly covered, as they are small, and would rot if covered with any great depth of soil: when the young plants are about an inch high they should be planted out thinly in other pots, in which they will grow strong, and, when large enough, they may be planted in the open ground, spring being the best time.

The genus was named by Linnæus in allusion to the virgin Andromeda† (the daughter of Cepheus, King of Ethiopia), who was tied naked to a rock, and exposed to be devoured by a sea-monster to appease the wrath of Neptune, but was delivered by Perseus, who afterwards married her, and they had many children.

A. hypnöìdes is a small creeping evergreen shrub, growing in tufts to the height of four inches, and very much resembling a kind of moss. It is found in Lapland, Denmark, and Siberia, on the mountains, where it covers whole tracts of land, and adorns them with its beautiful flowers; and also on the north-west coast of North America. It was introduced into this country in 1798. The leaves are of a bright green, flat, and needle-like. The flowers, which appear in June and July, are produced on slender reddish stems: they are small and drooping, with a red calyx and a white corolla. This is one of the most beautiful of the alpine plants, but it is very difficult to grow it well. It is impatient of drought. It will succeed best planted in a good depth of grit and sandy peat on moist but well-drained ledges of rockwork fully exposed to the sun and air.

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* The character of the order *Ericàceæ* will be found in page 23.

† Because the plants grow attached to rocks in the midst of marshes which abound in aquatic monsters.

This and several other species of Andrómeda were placed in the genus *Cassìope** by the late Professor David Don.

POLYGALA PAUCIFOLIA.

PLATE XXIV.—FIG II.

Poly′gala paucifòlia, WILLDENOW. The naked-stalked Milkwort.

Natural Order—POLYGALACEÆ. The Milkwort Family.

MANY of the species of *Poly′gala* are very ornamental free-flowering greenhouse shrubs; but some are annuals, and a few are hardy perennials. Of the latter, one of the most common and best known *(P. vulgàris)* is a very pretty little British plant with blue flowers.

The generic name is from *polys,* much, and *gala,* milk, in allusion to the reputed effects of the plant on cattle that feed upon it.

P. paucifòlia is a beautiful little creeping hardy perennial species with brilliant purple flowers, which are produced in May and June, and are large for the size of the plant. It is a native of Canada, whence it was introduced in 1812. It grows well in rich leaf-mould and sand in moist situations, and is readily increased by dividing the roots.

Some of the Milkwort Family *(Polygalàceæ)* are low-growing herbaceous plants, and others are graceful shrubs, found in various parts of the world: some are remarkable for their beauty, and some are useful in medicine. The leaves are generally alternate, sometimes opposite, mostly simple, and always without stipules. The flowers are usually keel-shaped and beautifully crested or bearded, the stamens being generally united into a single body, and the anthers being mostly one-celled and opening by a pore at the apex. The leaves and roots have generally a bitter astringent taste, combined with an acrid and resinous flavour; these properties being particularly discernible in *Poly′gala Séncga* (the Rattlesnake root), a North American species which is reputed to be of great use medicinally, having been used with success in cases of pneumonia, asthma, croup, and chronic rheumatism, and as a cure for the bites of venomous reptiles. The beautiful little *Poly′gala vulgàris* (the common Milkwort) is said to possess some of the properties of *P. Sénega.*

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* From *Cassìope,* or *Cassiopèia,* wife of Cepheus, and mother of Andromeda, whose foolish boast that the beauty of her child was superior to that of the Nereides, provoked the wrath of Neptune.

CHEIRANTHUS ALPINUS.

PLATE XXIV.—FIG. III.

Cheiránthus alpìnus, LINNÆUS. The Alpine Wall-flower.
Natural Order—CRUCIFERÆ.* The Cruciferous Family.

By some botanists the genus *Cheiránthus* is restricted to the common wall-flower *(C. Chèiri)*, which has long been a favourite with most persons, and of which there are numerous very beautiful varieties now found in our gardens. Others, however, include in it several additional species. All the species require a rich and yet light soil.

The generic name is considered by some to be derived from *cheir*, a hand, and *anthos* a flower; while others derive it from *kheyry*, its Arabic name, and *anthos* a flower.

C. alpìnus is a native of Lapland and Norway, whence it was introduced in 1810. It grows about six inches high, and produces clusters of pretty bright yellow sweet-scented flowers from May till July. It is suitable for planting on rockwork, thriving best in sunny fissures in a mixture of loam and limestone. It may be propagated by cuttings.

* The character of the order *Crucíferæ* will be found in page 30.

CROCUS NUDIFLORUS.

PLATE XXV.—FIG. I.

Cròcus nudiflòrus, Sir James Edward Smith. The Naked-flowered Autumnal Crocus.

Natural Order—Iridaceæ.* The Iris Family.

The bright purple flowers of this beautiful autumnal Crocus appear in October (after the leaves of the year have withered), and somewhat resemble those of the Meadow Saffron *(Cólchicum autumnàle)*, but they are readily distinguished by having three, not six, stamens. The tube of the flower is very long, enclosed half way up in the sheathing scales. The orange-coloured stigmas are deeply cut, forming an elegant fringe or tassel. The leaves, which are very slender and have a narrow white line in the centre, appear very early in spring.

This species is a native of meadows and pastures in south-western Europe. It has, however, become perfectly naturalized in the meadows about Nottingham, and in some other localities in central England. It is very suitable for planting on rockwork or in the mixed border, and it is also very effective as an edging round beds. A light sandy soil appears to suit it best.

I am indebted to Messrs. Backhouse and Son for an opportunity of figuring this species and also *C. speciòsus*.

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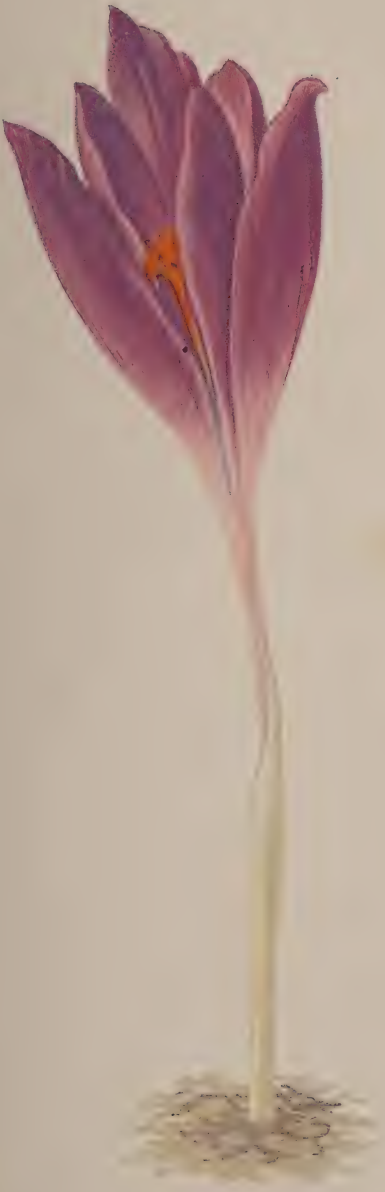
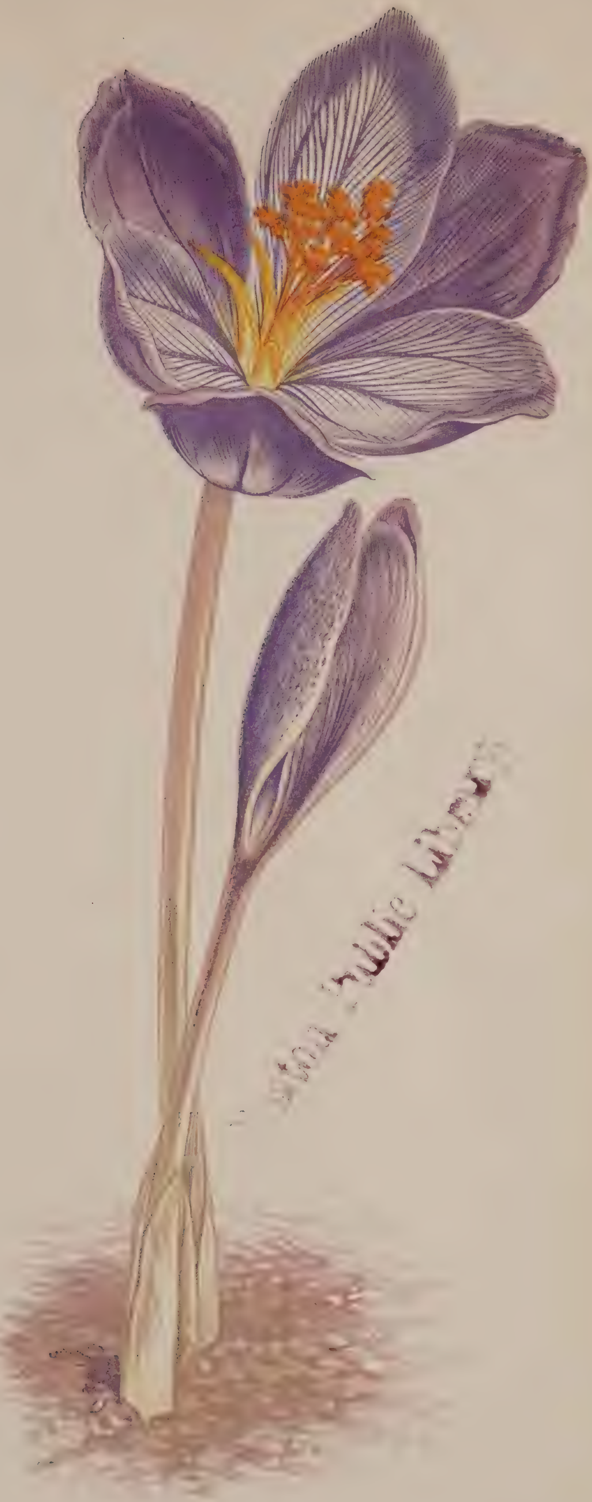
* The character of the order *Iridàceæ* has been already given in page 69.





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CROCUS NUDIFLORUS.

C. SPECIOSUS.

XXV

CROCUS SPECIOSUS.

PLATE XXV.—FIG. II.

Cròcus speciòsus, BIEBERSTEIN. The Showy Autumnal Crocus.
Natural Order—IRIDACEÆ.* The Iris Family.

THIS is, perhaps, the finest of the autumnal Crocuses, coming into flower about the end of September or the beginning of October. The large purplish-blue flowers have the inside of the petals striped with deep purple lines. The stigmas are of a rich orange-colour, and so deeply cut as to appear fringed. The leaves appear with the flowers, but do not attain their full growth till the following spring. Of this very beautiful species, which is a native of the Caucasus and of Transylvania, there are three varieties, figures and descriptions of which, by the late Mr. Herbert, will be found in the sixty-seventh volume of the *Botanical Magazine.* In good rich loam or in peat earth this Crocus will thrive well; and it will be found very suitable for forming edgings, and also for planting on rockwork or in the mixed border. It may be increased by offsets, or it may be raised from seed.

* See page 69.

THYMUS AZUREUS.

PLATE XXVI.—FIG. I.

Thỳmus azùreus, B. Maund. The Azure Thyme.
Natural Order—Labiatæ.* The Labiate Family.

The genus *Thỳmus* consists almost entirely of dwarf undershrubs, which are of easy culture in dry, light, sandy loam, in open situations, and are readily increased by division of the roots, by cuttings, or by seeds. The Wild Thyme *(T. Serpýllum)* is fragrant, and yields an essential oil that is very heating. It has the same sensible qualities as the Garden Thyme, but the flavour is milder, and rather more grateful. *T. vulgàris* (the Garden Thyme) has the aromatic qualities common to lavender, sage, rosemary, and other plants. It yields a species of camphor in distillation with water. In Spain it is infused in the pickle with which olives are preserved. Before the oriental spices were common, it was much used in cookery.

The generic name is supposed to be derived either from *thumos,* courage, strength, the balsamic smell of Thyme being reviving; or from *thuo,* to perfume, the plant having been formerly used for incense in the temples.

T. azùreus is a pretty little plant, a native of the South of Europe, whence it was introduced in 1830. It spreads closely over the surface of the soil, growing only two or three inches high. The flowers begin to appear in June.

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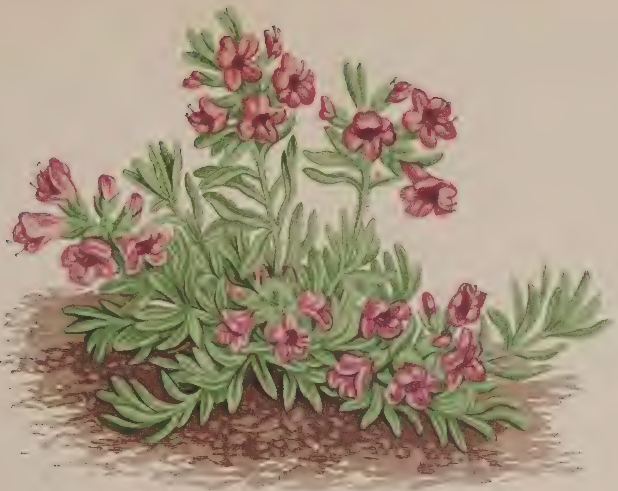
* The character of the order *Labiàtœ* will be found in page 64.



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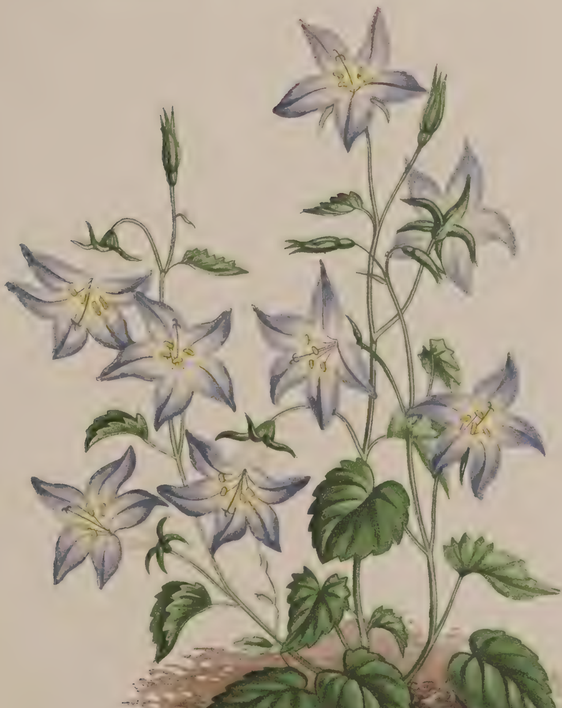

THYMUS A[illegible].

CAMPANULA [illegible]

XXVI

CAMPANULA GARGANICA.

PLATE XXVI.—FIG. II.

Campánula gargánica, TENORE. The Garganian Bell-flower.
Natural Order—CAMPANULACEÆ.* The Bell-flower Family.

THIS very pretty perennial species begins to flower in June, and continues producing a succession of its delicate bluish blossoms for several months if planted in good deep soil. It was discovered by Professor Tenore on Mount St. Angelo† (anciently known by the name of Garganus), near Naples, and it was introduced in 1832. The plant is admirably adapted for rockwork, as it only grows three or four inches high, and has a prostrate habit: care should be taken, however, to select warm sunny well-drained spots, for it is easily injured by too much wet. It is also very suitable for vases in balconies or windows, thriving best in a mixture of peat and loam.

* The character of the order *Campanulàceæ* will be found in page 8.

† The Harebell of St. Angelo is one name by which it is known.

ANDROMEDA TETRAGONA.

PLATE XXVII.—FIG. I.

Andrómeda tetragòna, Linnæus. The four-cornered Andromeda.

Natural Order—Ericaceæ.* The Heath Family.

This is a beautiful small, creeping, heath-like, evergreen shrub, a native of Lapland, Siberia, and North America, from Canada to the north-west coast. It was introduced in 1810. The leaves are obtuse, with the margin revolute, minutely ciliated, and adpressedly imbricate in four rows. The flowers, which are produced in March and April, are of a pure white, bell-shaped, and drooping. The plant only grows six or eight inches high, and is particularly suitable for rockwork. It should be grown in sandy peat, and should have an abundant supply of moisture during the summer. It is readily increased by division.

This is one of the five or six species which the late Professor David Don placed in the genus *Cassìope.*

CYCLAMEN COUM VERNUM.

PLATE XXVII.—FIG. II.

Cy'clamen còum vérnum. The Spring Cyclamen.

Natural Order—Primulaceæ.† The Primrose Family.

All the kinds of *Cy'clamen* are dwarf tuberous-rooted plants with very beautiful flowers, the reflexed segments of which readily distinguish

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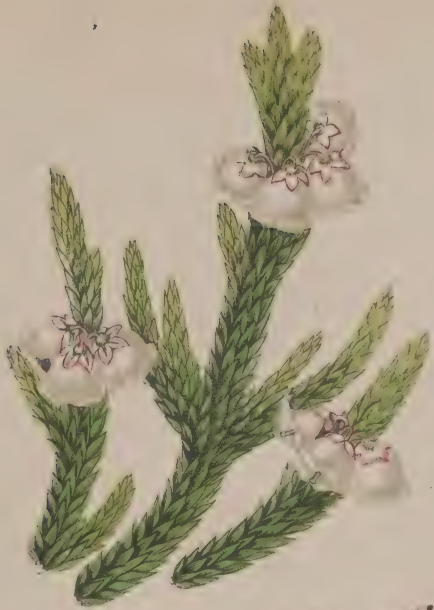
* The character of the order *Ericàceæ* will be found in page 23.

† The character of the order *Primulàceæ* will be found in page 14.



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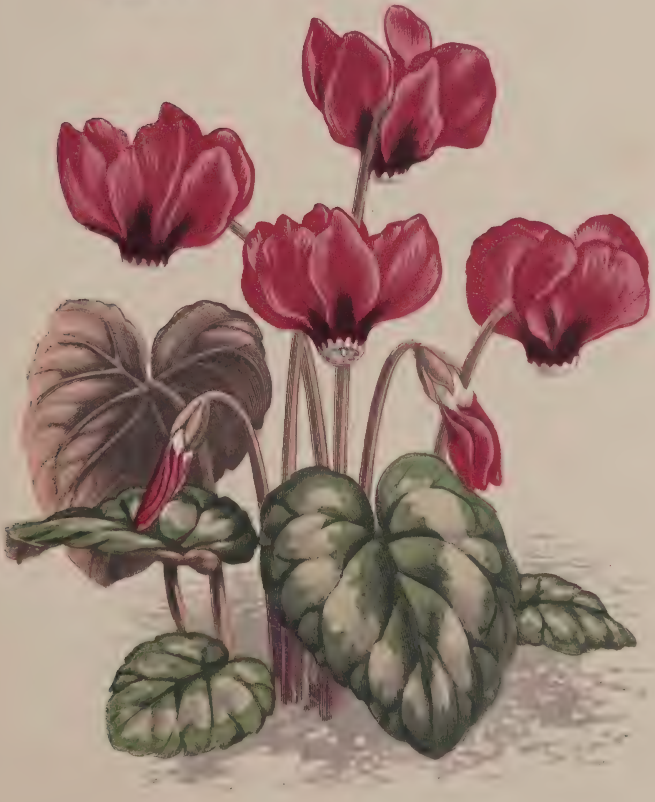

ANDROMEDA TETRAGONA.

CYCLAMEN COUM VERNUM.

XXVII

them. They are mostly natives of Europe. Although the tubers of *C. còum* (which are round, flattened, and solid) are remarkably acrid, they form the principal food of the wild swine of Sicily, and hence the plant has received the common name of Sowbread.

The Common Cyclamen (*C. europœ̀um*), which is a native of southern Europe and western Asia, has established itself in a few localities in the southern and eastern parts of England.

The different species of Cyclamen ripen seeds freely, and by them may be easily increased. The seeds should be sown as soon as they are ripe in well-drained pots filled with light soil, the pots being kept in a frame or greenhouse till the beginning of May. The young plants may then be transplanted into a bed of light soil, and covered with a frame till Midsummer. By the following autumn they will be found strong vigorous plants, when they may be taken up, potted singly in very small pots, and placed in the greenhouse, where they will flower beautifully, producing from fifty to eighty flowers from a single tuber. *Cy'clamen còum* ripens its seeds in May, and if they are immediately sown in pots or pans, the young plants produced will flower in the January twelvemonth following.

The word *Cy'clamen* is derived from *kyklos*, a circle, in allusion, some say, to the round leaves; or, according to others, to the curious manner in which the flower stalks curl up when the seeds begin to ripen.

C. còum (the round-leaved Cyclamen) grows wild in many parts of Italy* and Germany, in woods and shady places, flowering, sometimes, as early as February when the weather is mild. In this country, however, it seldom flowers in the open garden before March or April. The *C. vérnum* of Morison bears so close a resemblance to *C. còum*, that it is regarded by some as only a variety of that species, differing chiefly in having a short stem, and in the leaves being cordate, instead of kidney-shaped, and beautifully marked. It was introduced from the South of Europe in 1814. It will succeed well in a warm border, in a light sandy soil, or on rockwork, in well drained rather shady fissures in rich loam and limestone; or it may be grown in pots for the conservatory or the drawing-room in an equal mixture of loam, peat, and sand. The only mode of increasing it is by seeds, which ripen plentifully, if care be taken to scatter some pollen on the stigma. The rich purplish-red flowers are produced in March.

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* At Albano, near Rome, it is found in great abundance.

SAXIFRAGA AIZOON.

PLATE XXVIII.—FIG. I.

Saxífraga Aizòon, Persoon. The Aizoon, or large-margined Saxifrage.
Natural Order—Saxifragaceæ.* The Saxifrage Family.

Though this species cannot be recommended for the beauty of its flowers, yet it is a very desirable plant on account of the beautiful silvery rosettes formed by the leaves, which are rather oblong, obtuse, and ciliated at the base, with the margins toothed and encrusted with pores. The flowers, which are white, are produced on stems, from six to twelve inches high, in June and July, the upper part of the stems being furnished with glandular hairs, while the lower part is usually smooth. The species was introduced from the Alps of Europe in 1731. It grows freely in the open garden planted in sandy loam, and is readily propagated by division. It is suitable for rockwork, for the mixed border, or for forming edgings.

SILENE SCHAFTA.

PLATE XXVIII.—FIG. II.

Silène Scháfta, Gmelin. The Schafta, or Late-flowering Catchfly.
Natural Order—Caryophyllaceæ.† The Pink and Carnation Family.

The species belonging to the genus *Silène* (which is an extensive one) have their stems usually covered with a viscid frothy secretion

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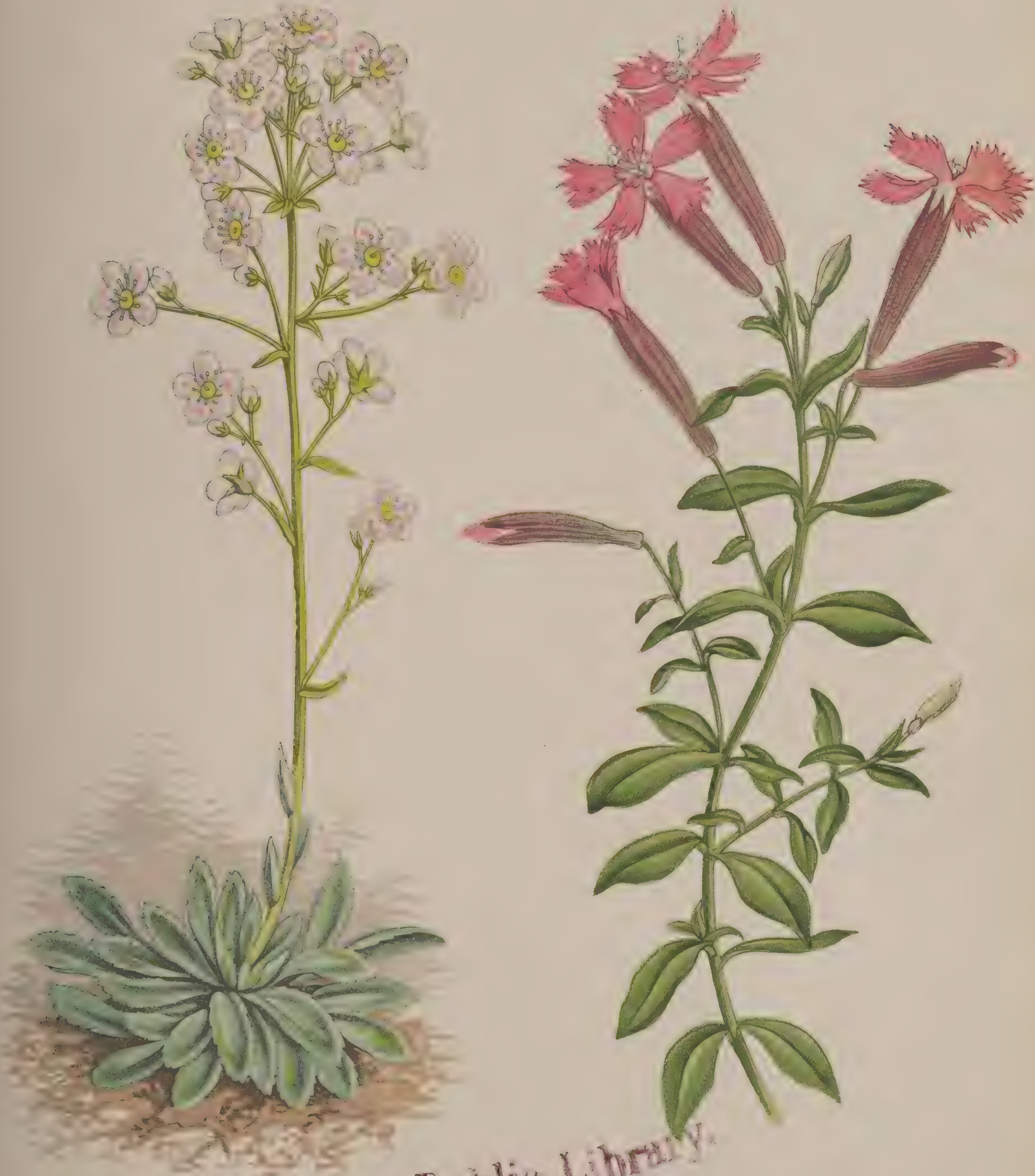
* The character of the order *Saxifragàceæ* will be found in page 40.

† The character of the order *Caryophyllàceæ* will be found in page 1.



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SAXIFRAGA AIZOON.

SILENE SCHAFTA.

XXVIII

which is said to entrap the smaller kinds of flies, and it is in allusion to this moisture that the generic name has been given to the plants (from *sialon*, saliva). Hence also the English name of Catchfly. Nearly all the species are hardy, and most of them are ornamental: a good many are annuals; some are biennials, and some perennials.

S. Scháfta is an extremely pretty species, very suitable for rockwork or for the mixed border, and very desirable on account of its blooming profusely, and for a long time in the autumn. In the *Journal of the Horticultural Society of London* it is described as "a beautiful little herbaceous plant, producing a great number of spreading slender downy stems, which form compact tufts, and are terminated near the extremity by four or five bright purple flowers* more than an inch long. Of these flowers, that at the extremity of the shoot opens first, and those below it one after the other in succession, so that the branches are by degrees covered all over with blossoms. Its stems do not rise above six inches high, and render it well suited for bedding out, or for cultivating among collections of alpines, or for rockwork, over which it will bend gracefully." It is a hardy perennial, growing freely in any light rich soil, and flowering from the end of June to October. It is increased by seeds, which are produced freely; but the young plants from seed will not flower before the second season.

The Horticultural Society received this plant in 1844 from Dr. Fischer, who obtained it from the Botanic Garden at Dorpat, and it also found its way to this country through France.

Dr. Hohenacker, who first published an account of this very beautiful Silène in the *Proceedings of the Imperial Natural History Society of Moscow* for 1838, calls it *S. Scháfta* of S. G. Gmelin; but he does not explain the meaning of the name, which is presumed to be that by which it is called in its native country. He states, however, "that it grows naturally in rocky places, on a mountain called Keridach, in the district of Suwant, in the Russian province of Talysch, at the height of from two thousand five hundred to four thousand feet, flowering in October."

The figure in our plate is taken from a plant kindly forwarded by Messrs. Backhouse and Son.

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* [The flowers are pink, rather than purple.]

LINARIA ALPINA.

PLATE XXIX.—FIG. I.

Linària alpìna, A. P. de Candolle. The Alpine Toad-flax.
Natural Order—Scrophulariaceæ.* The Figwort Family.

This very pretty Toad-flax is a native of various mountainous parts of Europe, growing in moist stony situations. According to Lobel, it was cultivated in this country as long ago as 1570. It is a dwarf trailing plant, and forms dense silvery tufts, very suitable for the decoration of rockwork. Though generally regarded as a biennial, in favourable situations it will become perennial. The flowers, which are of a bluish violet with two orange-coloured bosses in the throat, are produced during the greater part of the summer. This charming little plant will succeed best planted in moist loam, peat, and grit in sunny chinks of rockwork. It is readily increased, as it produces seed freely.

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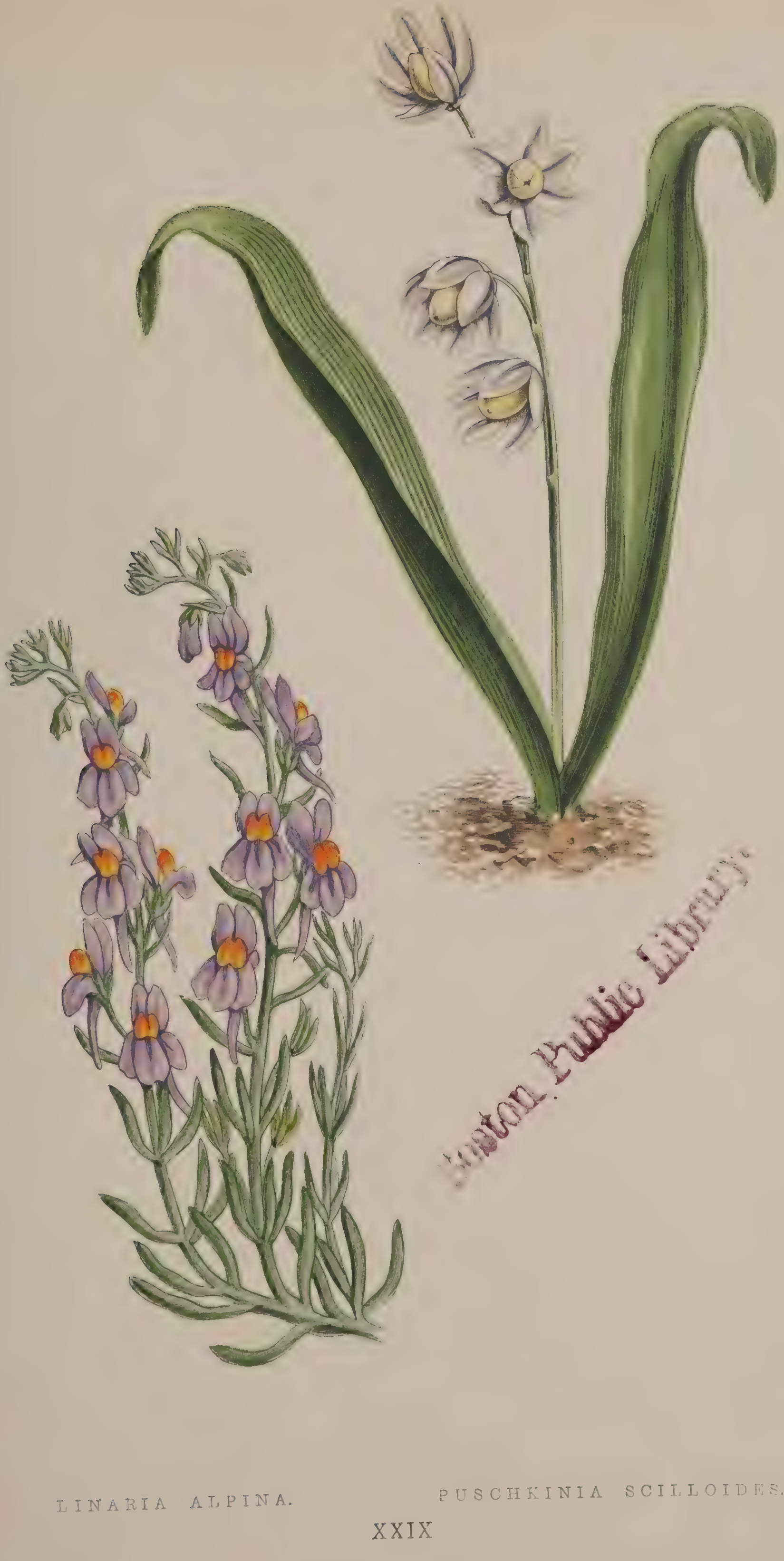
* The character of the order *Scrophulariàceæ* will be found in page 4.



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LINARIA ALPINA. PUSCHKINIA SCILLOIDES.

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PUSCHKINIA SCILLOIDES.

PLATE XXIX.—FIG. II.

Puschkínia scillöìdes, ADAMS. The Scilla-like Puschkinia.
Natural Order—ASPHODELACEÆ.* The Asphodel Family.

THE genus *Puschkínia* was named by Dr. Adams in honour of the late Count Apollos Mussin Puschkin, a Russian botanist and patron of botany.

P. scillöìdes (the only species of the genus) is a very pretty little bulbous plant from Siberia, with the flowers, which are white striped with blue, in a terminal corymb, and very much resembling those of a Scilla, but well defined by the very curious union of the stamens into a cup. The leaves are concave and grow from the root. It should be planted in light sandy soil on the lowest parts of rockwork, mixed with other small spring-flowering bulbs. It is easily increased by offsets.

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* The character of the order *Asphodelàceæ* has been already given in page 57.

SEDUM EWERSII.

PLATE XXX.—FIG. I.

Sèdum Ewérsii, LEDEBOUR. Ewers' Stonecrop.
Natural Order—CRASSULACEÆ.* The Crassula Family.

THIS very dwarf and pretty species of Stonecrop is a perennial, a native of Siberia, whence it was introduced in 1829. The smooth and peculiarly glaucous or whitish leaves give the plant a very distinct character. The bright rose-coloured flowers are produced in terminal corymbs, appearing in July and August. Like most of the other kinds of Stonecrop, this species grows best in sandy loam, mixed with a small portion of lime rubbish; and whether grown in pots or vases, on rock-work or in the open garden, good drainage should be secured. The plant is readily increased by cuttings, or by division of the roots.

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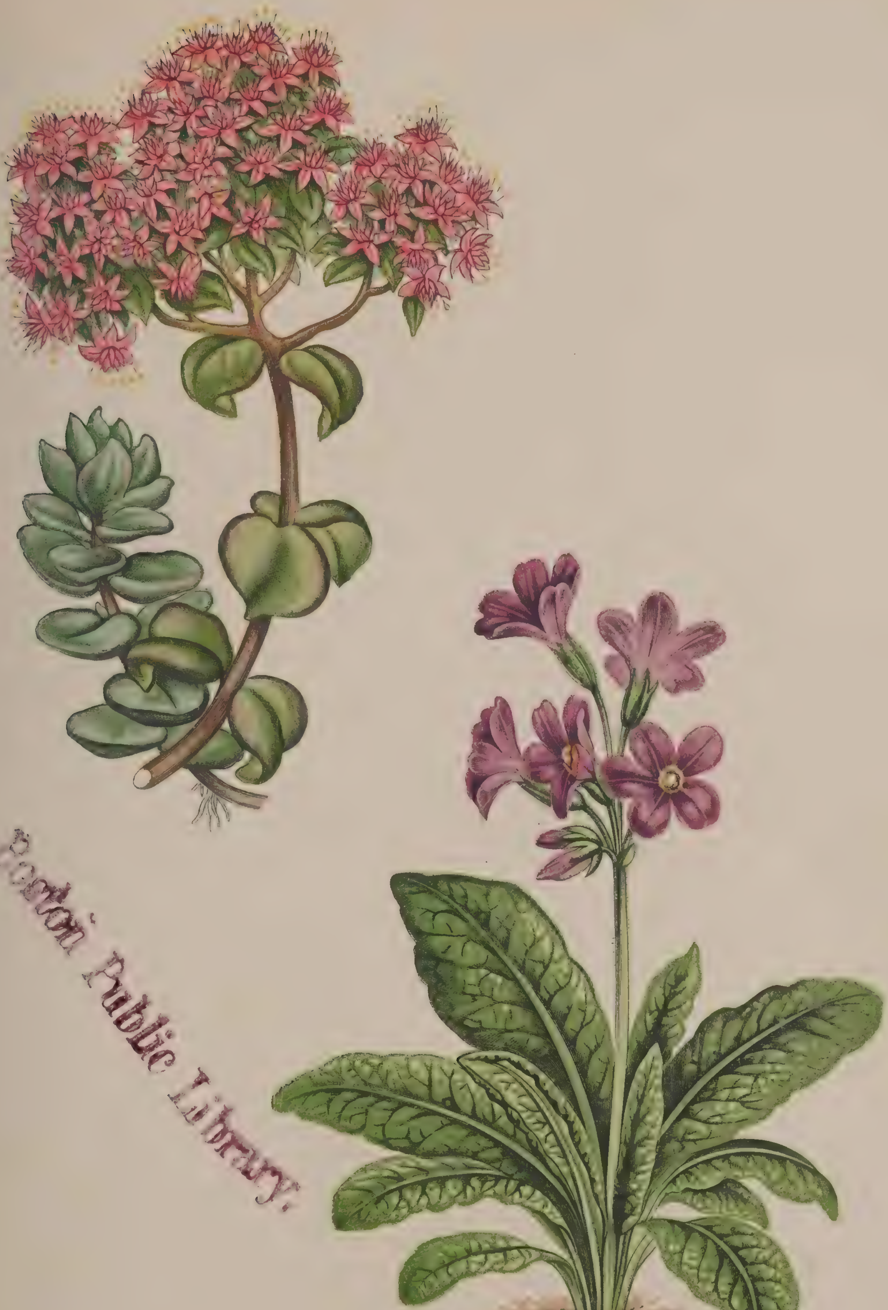
* The character of the order *Crassulàceæ* will be found in page 6.



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SEDUM EWERSII. RIMULA AM[illegible]

XXX

PRIMULA AMŒNA.

PLATE XXX.—FIG. II.

Prímula amœ̀na, BIEBERSTEIN. The Pleasing, or Purple Caucasian Primrose.
Natural Order—PRIMULACEÆ.* The Primrose Family.

MARSCHALL VON BIEBERSTEIN, the discoverer of this very desirable Primrose, describes it as having, in its native station (the Caucasian Alps), an umbel with from three to ten flowers;† and in cultivation the number of flowers in each umbel appears to vary very much, as a specimen which flowered in 1833 in the garden of the late Dr. Neill at Canon Mills, near Edinburgh (and of which a figure appeared in the *Botanical Magazine* for that year), produced an umbel with as many as eighteen perfect flowers. The leaves are produced in tufts close to the ground, very similar to those of the Common Primrose. The flowers appear quite early in the spring: they are of a beautiful purplish-lilac in the bud, and when they first open, becoming of a bluish tint after a few days. For rockwork, the mixed border, and for beds in a spring flower-garden, this Primrose will be found very valuable. It is easily increased by dividing the roots.

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* The character of the order *Primulàceœ* will be found in page 14.

† A variety is noticed by Bieberstein, in which the scape is wanting, the pedicels being all radical and single-flowered.

SOLDANELLA ALPINA.

PLATE XXXI.—FIG. I.

Soldanèlla alpìna, Linnæus. The Alpine Soldanella.
Natural Order—Primulaceæ.* The Primrose Family.

All the species of *Soldanèlla* are little, tufted, stemless plants, with roundish leaves, and pretty fringed flowers. They are all natives of Europe (mostly of Switzerland), and they succeed best in peat earth, or a mixture of peat and loam. They are increased by seeds, or by division of the roots.

The generic name is the diminutive of *solidus,* a shilling, in allusion to the round leaves of the plants somewhat resembling pieces of money in shape.

S. alpìna was introduced from Switzerland in 1656. On account of its small size it is usually grown in pots, but it will succeed very well planted on well-drained ledges of rockwork, or on raised beds in a spring flower-garden, in moist sandy peat and loam. Like many other alpine plants, it requires shade and moisture in the summer, and hence a northern aspect will be found best for it; while in very severe winters it may need some slight protection in lieu of its natural covering of snow. The small round or kidney-shaped leathery evergreen leaves grow in tufts close to the ground; and the beautiful bell-shaped fringed flowers are borne on slender stems, appearing usually in March. This very interesting little plant deserves to be more generally found in collections than it is at present. It may be increased by dividing the roots early in the autumn.

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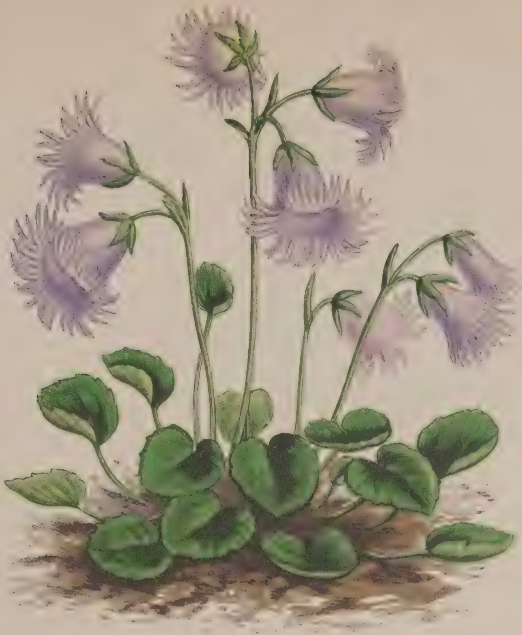
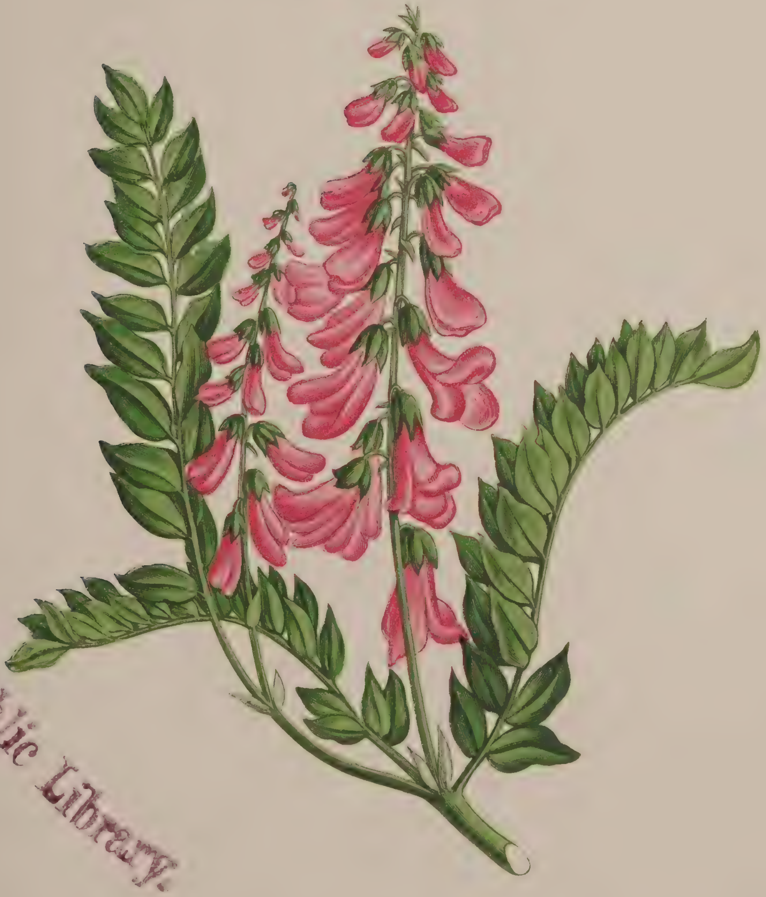
* The character of the order *Primulàceæ* is given in page 14.





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SOLDANELLA AL[illegible]

HEDYSARUM

XXXI

HEDYSARUM OBSCURUM.

PLATE XXXI.—FIG. II.

Hedy'sarum obscùrum, Linnæus. The Creeping-rooted Hedysarum.
Natural Order—Leguminosæ. The Leguminous Family.

Many of the species of *Hedy'sarum* are handsome plants, with racemes of very beautiful pea-like flowers, very suitable for planting in the mixed border or on rockwork. They grow best in moist rich loam, or a mixture of loam and sandy peat; and they are increased by dividing the roots in spring, or by seeds. The generic name is said by some to be derived from *hedys*—sweet, and *aroma*—perfume; while others think it is rather from *hedysaron*, the name of a papilionaceous plant described by Theophrastus.

H. obscùrum is a native of the Alps of Germany and Switzerland, and it was introduced in 1640. It is not, however, very generally found in collections of alpine plants, though it can be easily obtained. It is a perennial, rarely exceeding a foot in height, and producing striking spikes of pendulous flowers, which are of a most beautiful rose-colour, in July and August. There is a variety with white flowers, according to Haller. The plant is very suitable for rockwork. It is easily increased by dividing the creeping roots, or by seeds.

The order to which *Hedy'sarum* belongs *(Leguminòsæ)* is, next to *Compósitæ*, the most extensive of all the Natural Orders of Flowering Plants, containing nearly seven thousand species, many of which are remarkable for their great beauty, and many for their great utility. They vary considerably in appearance: some are herbaceous, some are shrubs, and others are large trees. They have alternate leaves, which are generally compound, the common petiole (leaf-stalk) being frequently tumid (swollen): they have also two stipules* at the base of the petiole, and frequently two others to each leaflet. Usually the pedicels* are articulated (jointed), and the flowers are furnished with small bracts.† The calyx is five-parted; and the corolla, which is sometimes papilionaceous‡ and sometimes spreading, has never more than five petals, though frequently it has less. Generally the fruit is a legume,¶ though sometimes, when there is only one seed, it has the appearance of a drupe.|| The pea-like flowers,§ therefore, characterize a large number of the plants of the order, and the pods or legumes (which resemble more or less the pod of the common pea) and pinnate** leaves a good portion of the remainder. The plants composing the order are found more or less in nearly every part of the known world, though they are distributed in extremely unequal proportions, and in general they diminish sensibly in approaching the Pole.

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* Small leaf-like appendages.

The Leguminòsæ have been divided into three sub-orders or tribes, the first of which is called *Papilionàceæ,* from the flowers of the plants included in it being supposed to resemble a genus of butterflies, the scientific name of which is *Papílio.* The flower of the Sweet Pea *(Láthyrus odoràtus)* may be taken as a type of this sub-order, and on examination it will be found that it has a small green calyx cut into five divisions, not generally considered regular sepals. The corolla has five petals, the largest of which stands erect, and is called the vexillum or standard; below this are two smaller petals, called the alæ or wings; and below these again are two other petals, joined together so as to form a kind of boat, called the carina or keel, and serving as a cradle for the stamens and pistil. There are ten stamens, nine of which have the lower half of their filaments growing together and forming a fleshy substance at the base, the other being free. The ovary is oblong, and terminates in a filiform style with a pointed stigma: it is one-celled, and many-seeded, the seeds being the peas. When the petals fall, the pod still retains the calyx and the style, and these remain on till the seeds are ripe, when the pod divides naturally into two parts, or valves, as they are called, which curl back and discharge the seeds. If the pod be examined before it bursts,

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[*] The small foot-stalks of the flower.

[†] Floral leaves.

[‡] Like a butterfly, as the flower of the pea.

[¶] A pod like that of the pea.

[||] Of the form of stone-fruit.

[§] Double flowers are rarely found in this order: those of the Furze and the Spanish Broom are the most remarkable.

[**] When the leaflets are disposed in pairs along a central stalk.

it will be found that the valves are composed of a fleshy substance, lined with a strong membrane or skin, and that they are united by two seams, called the dorsal and ventral sutures. Along the ventral suture there runs a kind of nerve, called the placenta, to which the peas are attached, each pea being furnished with a little separate stalk, called a funicle. The pod of the pea, then, is a character by which the greater part of the plants may be easily distinguished. The flowers vary in the different genera: in some the calyx is tubular, and in others it is inflated; in some the calyx has only four notches, or teeth, as they are called, instead of five (as in the pea), and in others it has five distinct sepals divided to the base. Again, the parts of the corolla vary also in proportion to each other, the keel in some of the Australian plants belonging to this sub-order being as long as the standard (as is the case in the flowers of the beautiful *Kennèdya Marryáttæ)*; while in others the wings are so small as to be scarcely visible. In many of the species also the stamens are free, that is, divided to the base, and in others they resemble those of the sweet pea in having nine joined together and one free; while in others the whole are joined together at the base. Again, the seeds vary so much that the tribe has been divided into two sections: the one containing those plants the seeds of which, when they begin to germinate, produce two fleshy seed-leaves or cotyledons (like the common bean); and the other, those having thin seed-leaves. The seeds of papilionaceous plants which have thin cotyledons are not eatable, but those having fleshy cotyledons may be safely used as food. The fleshy cotyledons do not always rise above the ground, but they do so in the bean and the lupine, and may be examined to notice how much they differ from the true leaves. Of plants having thin seed-leaves, the seeds of which are not eatable, the following may be mentioned as examples: the Common Furze *(Uˋlex europæˋus)*, the Spanish Broom *(Spártium ju'nceum)*, the Common Broom *(Cy'tisus scopàrius)*, and both of the Laburnums *(Cy'tisus Labúrnum* and *C. alpìnus**)*. Of the useful plants of the order, possessing wholesome qualities, the greatest number will be found in this papilionaceous section: clover, lucerne, and saintfoin are well-known fodder-plants; and peas, beans, lentils, the curious and, indeed, remarkable little plant called the underground kidney-bean *(A'rachis hypogæˋa)*, whose pods are forced into the ground after the flowering has been accomplished, and many others, are common articles of food under the name of pulse. The roots of the Liquorice *(Glycyrrhìza glàbra)* contain an abundance of sweet mucilaginous juice, which, as is well known, is much esteemed;

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* The seeds of both species are very poisonous.

and the roots of *A`brus precatòrius* (whose scarlet seeds, with a black scar, are commonly used as beads) possess the same properties. Many are useful as medicine (as the scorpion senna,* African kino,† East Indian kino,‡ and others); a few produce gum (as tragacanth¶); some are useful in dyeing (as indigo, and others); and several furnish excellent timber (as the Laburnum, the Robinia or False Acacia, and the Rosewood‖). A great many of the papilionaceous plants, too, are remarkable for the great beauty of their flowers, as the *Wistària sinénsis,* with its long racemes of a delicate lilac colour; the *Erythrìna,* or Coral-tree, and the *Cliánthus,* or Glory Pea, with their deep crimson flowers; the various species of *Chorózema, Indigófera* (Indigo), *Clitòria, Kennèdya, Lupìnus,* and many other genera.

The second sub-order of the Leguminòsæ is called *Cæsalpinièæ,* and the flowers of the plants included in it have generally five regular widely-spreading petals, which are never joined together, and stamens of unequal length, which, with very few exceptions, are also perfectly free. Generally the petals are of the same size and shape, though sometimes, as in the Barbadoes Flower-Fence (*Poinciàna* or *Cæsalpínia pulchérrima*), four are of the same shape, and one deformed. The filaments of some of the stamens are very long and curve over, but the others are much shorter and erect. The style is long and slender, ending in a pointed stigma. The legume is flat, and it looks as if it were many-celled, from the seeds being divided from each other by a kind of spongy substance, frequently found in the pods of plants belonging to this sub-order. Some of the plants of interest are the following:—the Carob-Tree, or Algaròba Bean *(Ceratònia Síliqua),* which is considered to be the Locust Tree of Scripture, and is sometimes called St. John's Bread.§ The Tamarind Tree *(Tamaríndus índica),* the pods of which, prepared with sugar, are the well-known tamarinds. *Cássia lanceolàta,* the leaves of which furnish senna. The Honey Locusts, some of which (especially *Gledítschia hórrida)* are remarkable for the large thorns on the trunk and large branches, as well as in the axils of the leaves. The Logwood *(Hæmatóxylon campeachiànum),* chips of the wood of which are used for dyeing purple. The Judas Tree *(Cércis Siliquástrum),* the wood of which is beautifully veined with black and green, and takes a good polish. And, finally, the most remarkable and beautiful *Amhérstia nóbilis,* which has large flowers of a fine vermilion colour, diversified with yellow spots. When covered with its fine leaves and fully in flower, this tree is described as the most superb object that can be imagined.

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* *Coronílla E'merus.*

† The produce of *Pterocárpus erinàceus.*

‡ Formed, according to Dr. Royle, by *Pterocárpus marsùpium.*

¶ Yielded by *Astrágalus vèrus,* and similar spiny species.

‖ The fragrant Rosewood, or Bois de Palixandre, of the cabinet-makers, has been ascertained to be the wood of two or three species of Brazilian Triptolomeas, and not of a Physocaly'mma or a Mimòsa, as has been reported.

§ The dry pulp of the pod, in which the seeds are buried, is sweet and very nutritious, and is supposed to have been the food of St. John in the Wilderness, whence the name of St. John's Bread. Singers are said to chew this fruit for the purpose of improving the voice; and the seeds are said to have been the original carat weights of the jewellers. The pods or beans are now frequently used as a substitute for, or along with, oil-cake in feeding cattle.

The third sub-order of the Leguminòsæ is called *Mimòseæ,* and it comprises those plants which have their flowers in spikes or balls, as the Acacias and Mimosas. The flowers of the different kinds of *Acàcia* vary in having a corolla which has sometimes only four petals, these being occasionally united at the base, and a calyx which is sometimes only four-cleft. In some the flowers are in spikes, and in others they are in balls. In the pretty *Acàcia armàta,* a well-known greenhouse species, the calyx is five-toothed, the corolla has five petals, quite regular in shape, and the stamens vary from ten to two hundred in each flower, and are raised so much above the petals as to give the light tuft-like appearance which is so striking in these flowers. The legumes are large in proportion to the flowers. The valves of these legumes are not fleshy, as in the pea, but dry and hard, and when they open they do not curl back. In the plants of this Acàcia, as usually seen in greenhouses and conservatories, what appear to be the leaves are, in fact, only the petioles of the leaves dilated into what are called phyllodia; the true leaves, which are bipinnate*, having fallen off or never unfolded. The stipules of the leaves† are, in this Acàcia, converted into spines. In some kinds of Acàcia, the true leaves, with the petioles in their natural state, are retained in the adult plants, as is the case with *A. dealbàta;* and in others the bipinnate leaves are occasionally found attached to the phyllodia, as in *A. melanóxylon.* The bipinnate leaves have from six to twenty pairs of pinnæ, each consisting of from eight to forty pairs of small leaflets. The Gum Arabic Tree *(A. vèra)* has leaves with only two pairs of pinnæ, but each pinna has eight or ten pairs of small leaflets. Of the genus Acàcia there are several hundred species known. In the genus *Mimòsa* the flower differs from that of Acàcia in the corolla being funnel-shaped, and four or five-cleft; and there are seldom more than fifteen stamens, which are generally on longer filaments than those of the Acàcia. The legume is compressed and articulated or jointed between the seeds, so that the part containing one seed may be broken off without disturbing the rest. The Sensitive Plant *(Mimòsa pudìca)* is a well-known species of this genus. The cotyledons of the plants included in this sub-order are generally leafy; and the seeds are not eatable. Most of the plants may be easily recognised by their ball-shaped or tassel-like heads or spikes of flowers, each of which has a small cup-shaped, inconspicuous corolla, and a great number of long stamens; and by their pinnate leaves. Some of the plants belonging this sub-order are useful as furnishing gum; others supply good timber; and the bark of others is used in tanning.

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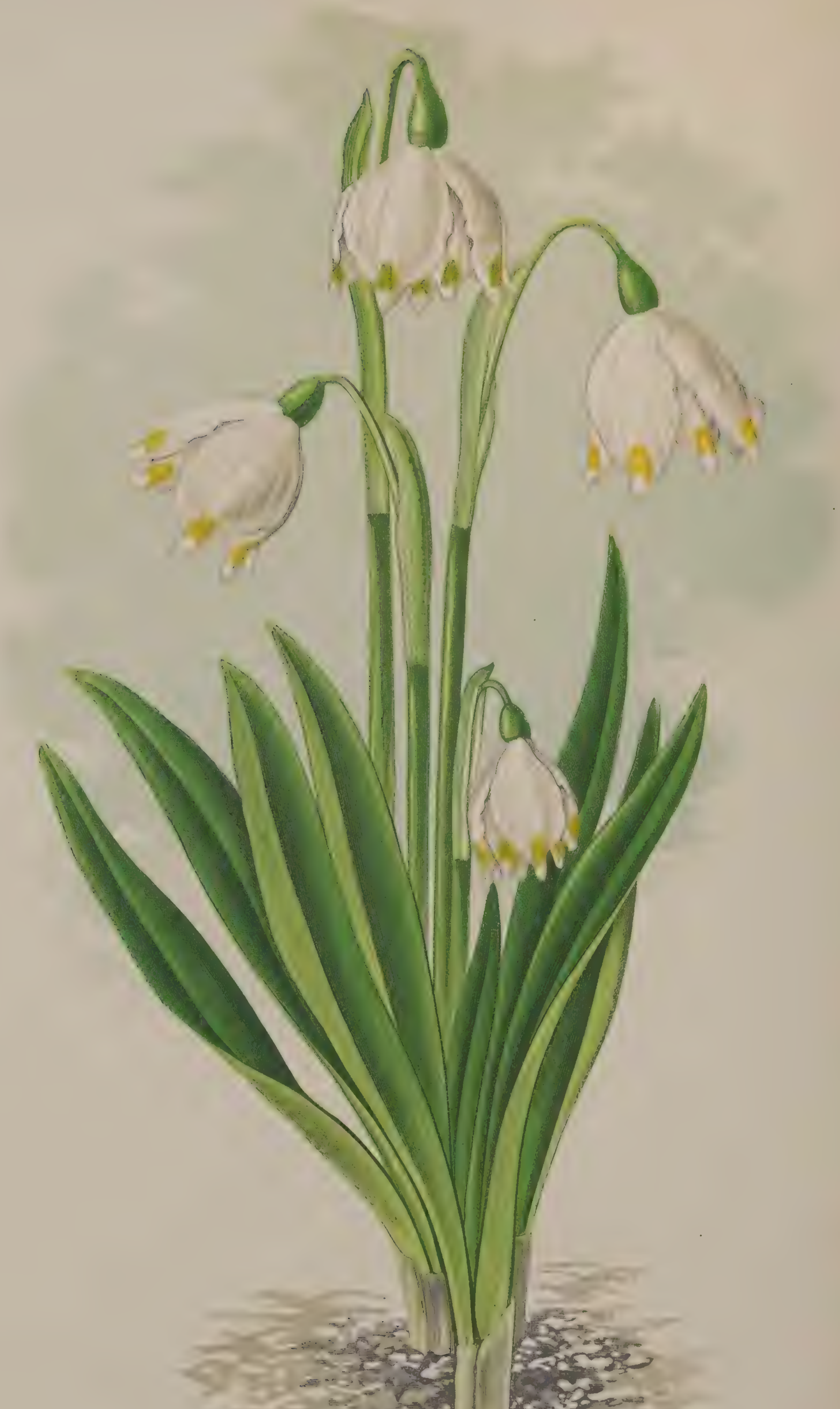
* Twice pinnate: when the leaflets of a pinnate leaf are themselves pinnate, as in the leaves of *Acàcia Julibríssin* and *A. melanóxylon.*

† These small leaf-like appendages are to ordinary leaves what bracts are to flowers.



LEUCOJUM VERNUM.

XXXII

LEUCOJUM VERNUM.

PLATE XXXII.

Leucòjum vérnum, LINNÆUS. The Spring Snow-flake.
Natural Order—AMARYLLIDACEÆ.* The Amaryllis Family.

THERE are very few species in the genus *Leucòjum:* they are hardy bulbous plants with pretty white flowers (very like the Snowdrop at first sight), and they grow best in a mixture of rich fibrous loam and sand. They are increased by offsets from the bulbs.

The name of *Leucòjum* is derived from *leukos,* white, and *ion,* a violet.

L. vérnum is a native of Germany and Switzerland (where it is found wild in moist woods and other shady places), and it was introduced in 1596. It is dedicated to St. Agnes, the patron saint of young virgins, from its loveliness and purity, and hence it is called St. Agnes's Flower. In Parkinson's time it was also known by the name of the Great Early Bulbous Violet. It is said to have become naturalized in the neighbourhood of Bridport, Dorsetshire.

The very elegant delightfully fragrant flowers greatly resemble the Snowdrop, but they are much larger and are about a month later in appearing: they are usually borne singly on foot-stalks from four to six inches in height. There is a yellowish green spot on each petal near the point. This is one of the most desirable of the early-flowering bulbs, and very suitable for rockwork or for borders. A sheltered situation should be chosen for it, and the soil should be well drained.

I am indebted to Messrs. Backhouse and Son for an opportunity of figuring this plant.

The Carpathian Snow-flake, formerly by some regarded as only a variety of *Leucòjum vérnum,* was considered by the late Dean Herbert to be a distinct species.

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* The character of the order *Amaryllidàceæ* has been already given in page 62.

ERYTHRÆA AGGREGATA.

PLATE XXXIII.—FIG. I.

Erythræ̀a aggregàta, Sweet. The Clustered Erythræa.
Natural Order—Gentianaceæ.* The Gentian Family.

Most of the species of *Erythræ̀a* are pretty annuals, three or four being natives of Britain. They are somewhat impatient of cultivation, and are, therefore, rarely seen in gardens, though they well deserve a place in collections. The generic name is from *Erythros*, red, in allusion to the prevailing colour of the flowers.

E. aggregàta is a native of the South of Europe, and was introduced in 1824. It is a very dwarf Gentian-like plant, forming dense tufts, and admirably adapted for rockwork. It also has a very pretty appearance when grown in small pots or vases, the best soil for it being a mixture of light sandy loam and peat. The bright rose-coloured flowers begin to appear early in the spring, continuing to be produced all the summer, and sometimes even till the middle of November. The plant is a biennial, and is easily raised from seed, which ripens in abundance.

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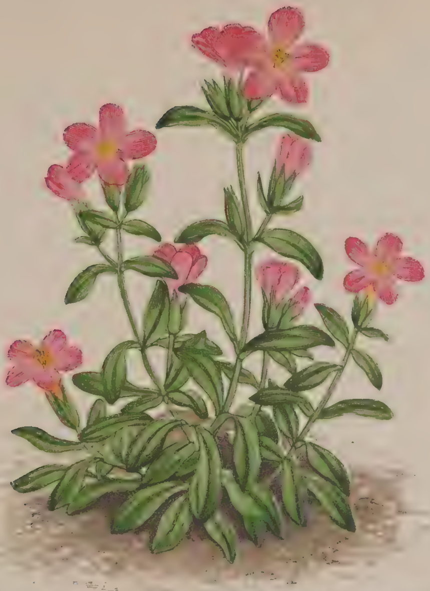
* The character of the order *Gentianàceæ* will be found in page 50.



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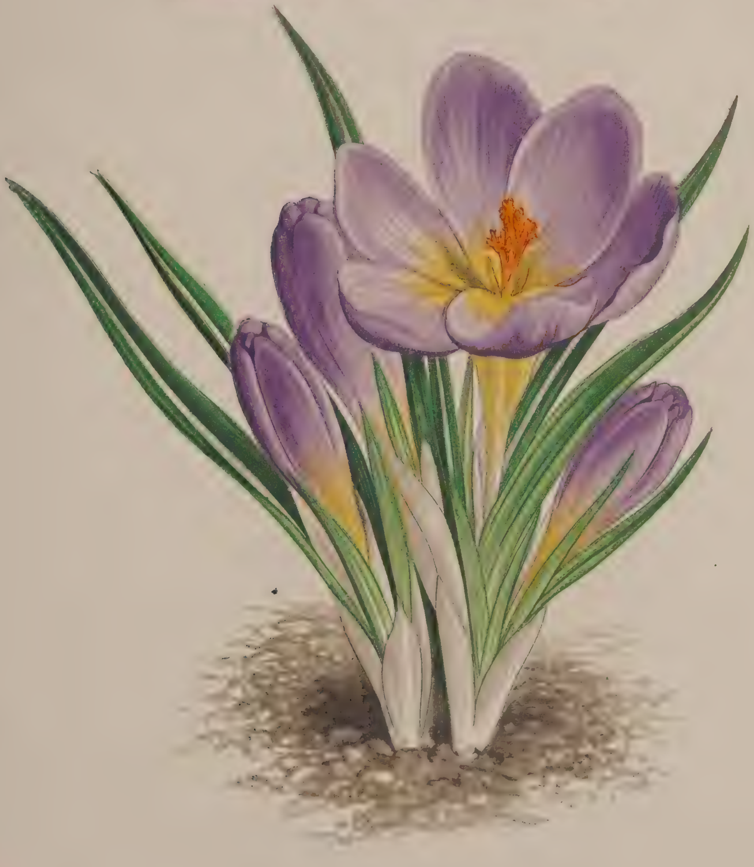

ERYTHRÆA MASSONII.

CROCUS SIEBERI.

XXXIII

CROCUS SIEBERI.

PLATE XXXIII.—FIG. II.

Cròcus Sielèri, Gay. Sieber's Crocus.
Natural Order—Iridaceæ.* The Iris Family.

This is a new very dwarf species from the mountains of Greece, with pale violet-coloured flowers, which appear in autumn and winter. It is easily cultivated, but, being very dwarf, it should have a front place on rockwork where it can be well seen, and where it will be fully exposed to the sun. It will also be found suitable for growing in pots or vases for the conservatory.

For an opportunity of figuring this very pretty Crocus I have to express my thanks to Messrs. Backhouse and Son.

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* The character of the order *Iridàceæ* is given in page 69.

LINUM SALSOLOIDES.

PLATE XXXIV.—FIG. I.

Lìnum salsolöìdes, LAMARCK. The Salsola-like Flax.
Natural Order—LINACEÆ. The Flax Family.

NEARLY all the species of *Lìnum* are ornamental plants, with beautiful though very fugitive flowers. Many of them are hardy perennials; some are annuals; two or three are biennials; and a few are shrubby. They should be planted in well-drained situations, in a mixture of moist loam and sandy peat. The greenhouse and the hardy shrubby kinds are easily increased by cuttings struck under a hand-glass. The perennial species are well adapted for planting in mixed flower-borders and on rockwork, the dwarf kinds being most suitable for the latter purpose: they may be increased by division of the roots, by cuttings, or by seeds. The annual and biennial kinds are increased by seeds, which should be sown in the open ground in April.

The generic name is derived from *Llin,** the Celtic word for thread, in allusion to the use made of the fibres of the common annual species *(L. usitatíssimum)*.

L. salsolöìdes is a shrubby species, growing about a foot high, a native of the South of Europe, whence it was introduced in 1810. The flowers, which are white, slightly tinged with pink, appear in June and July.

Messrs. Backhouse and Son, of York, were awarded a first-class certificate of merit for this pretty Flax at the meeting of the Royal Horticultural Society of London held at South Kensington on the 5th. of July, 1871. The figure in our plate is taken from a plant kindly forwarded by the Messrs. Backhouse.

The plants forming the order to which *Lìnum* belongs, and of which it is the type *(Linàceæ)*, are mostly annuals or perennials (though a

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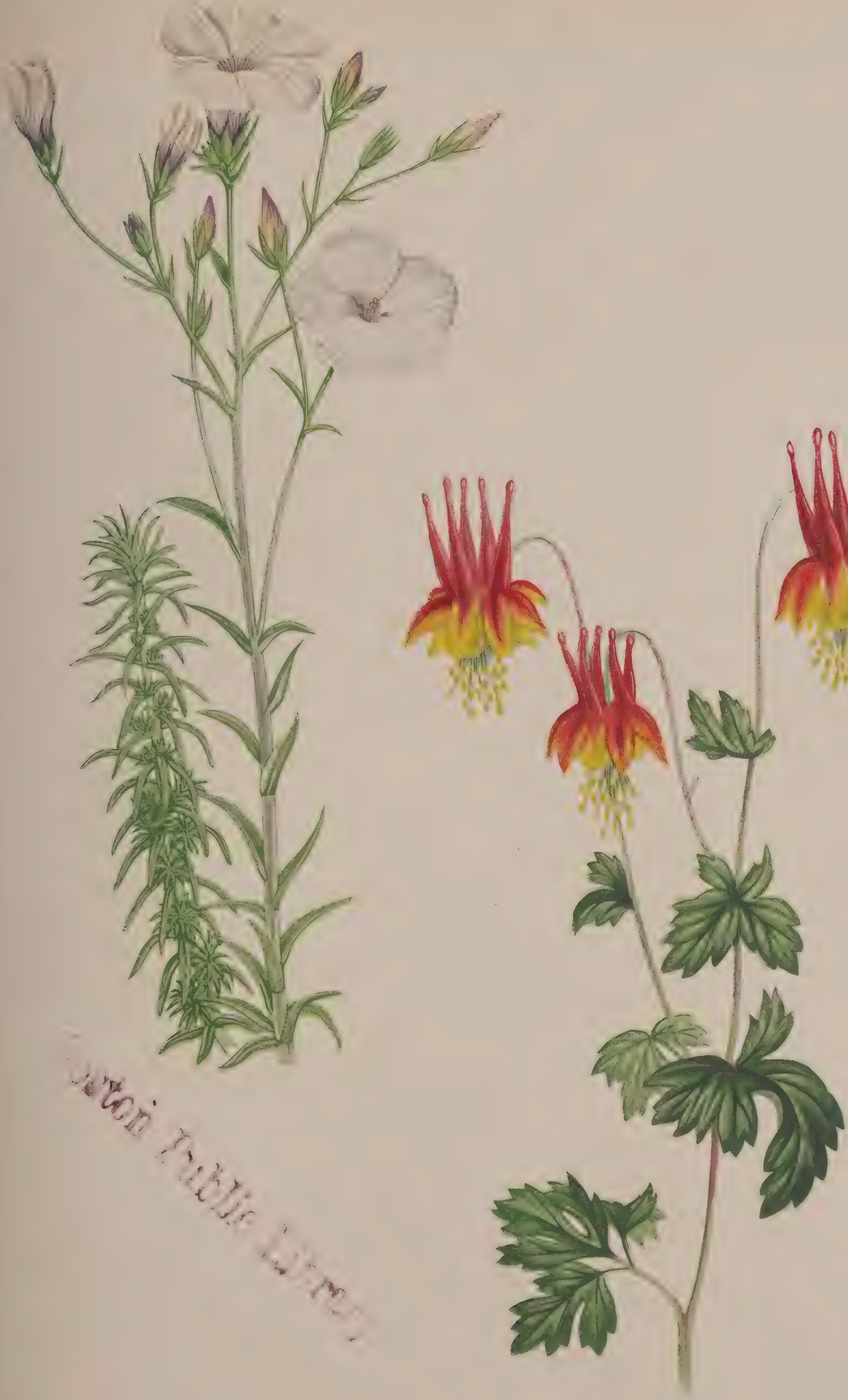
* Whence *Linon*, in Greek, and *Linum*, and its derivations, in Latin.



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LINUM SALSOLOIDES. AQUILEGIA NANA

XXXIV

few are even small shrubs), with alternate or opposite, simple, entire leaves (which are without stipules), and regular white, yellow, red, or blue flowers. The calyx has five sepals, rarely fewer, overlapping each other in the bud, rarely partially united. The corolla has five petals, twisted in the bud. The stamens are equal in number to the petals, and alternate with them, free, or the filaments very shortly united at the base in a hypogynous* ring, from which proceed little teeth opposite to the petals, indicating abortive stamens: anthers ovate, innate.† Styles five, rarely fewer, often slightly connected at the base, with capitate stigmas. Ovary with as many cells as styles, or incompletely divided into twice as many. Capsule separating into as many carpels as cells, without any central column; each carpel opening inwards by longitudinal slits, and containing two seeds, often separated by an incomplete partition.

Though this is a very small order, it is a very important one, containing, as it does, plants which are of the greatest use to man. The genus *Lìnum* is the principal one in the order. From the delicate fibre of the stems of the common Flax‡ *(Lìnum usitatíssimum)*, a British annual plant with lovely blue flowers, linen is made; and from the seeds, when crushed, oil is obtained, and linseed cake for feeding cattle is made. The meal of the seeds is much used for poultices.

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* When the stamens grow from under the ovary, they are called *hypogynous.*

† When the anthers are attached by their base, they are called *innate.*

‡ A very pretty description of this most useful and important little plant is given in the following lines by Mrs. Howitt:—

"Oh, the little Flax-flower,
  It groweth on the hill,
And be the breeze awake or asleep,
  It never standeth still.

It groweth, and it groweth fast,
  One day it is a seed,
And then a little grassy blade,
  Scarce bigger than a weed.

But then comes out the Flax-flower,
  As blue as is the sky;
And 'tis a dainty little thing,
  We say as we pass by.

Oh! 'tis a goodly little thing—
  It groweth for the poor;
And many a peasant blesses it,
  Beside his cottage door."

AQUILEGIA CANADENSIS.

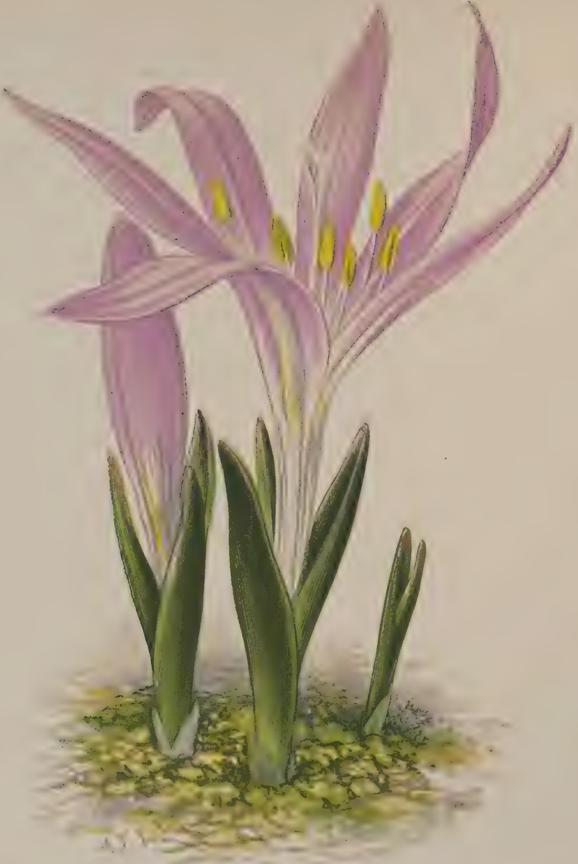
PLATE XXXIV.—FIG. II.

Aquilègia canadénsis, LINNÆUS. The Canadian Columbine.
Natural Order—RANUNCULACEÆ.* The Ranunculus, or Crowfoot Family.

THIS very ornamental Columbine was introduced from Virginia about 1640, by John Tradescant, son of the gardener to Charles I. It is described by Cornutus, in his Account of the Plants of Canada, under the name of *A. pùmila*,† and he says that in its native country it grows usually about nine inches high. In this country, however, it generally attains the same size as the common Columbine, which it greatly resembles in the appearance of its leaves, though it differs in having its flowers of a different form and colour. It is a hardy perennial, and may be easily propagated by dividing the roots either in the autumn or the spring; or it may be raised from seed, which it ripens in great abundance. In the latter case, however, the seeds should be sown as soon as they are ripe, as otherwise they will be a long time before they germinate. The very graceful, nodding, scarlet and orange flowers, which appear in April and May, are nearly two inches in length; and on each pedicel there are two bracts, so near the flower as to have almost the appearance of a distinct green calyx. In Parkinson's time this plant was called the Early Red Columbine of Virginia; and in our own day it is known as the American Wild Columbine.

* The character of the order *Ranunculàceæ* will be found in p. 6.

† *A. prœ̀cox* is the name given to it by Morison.



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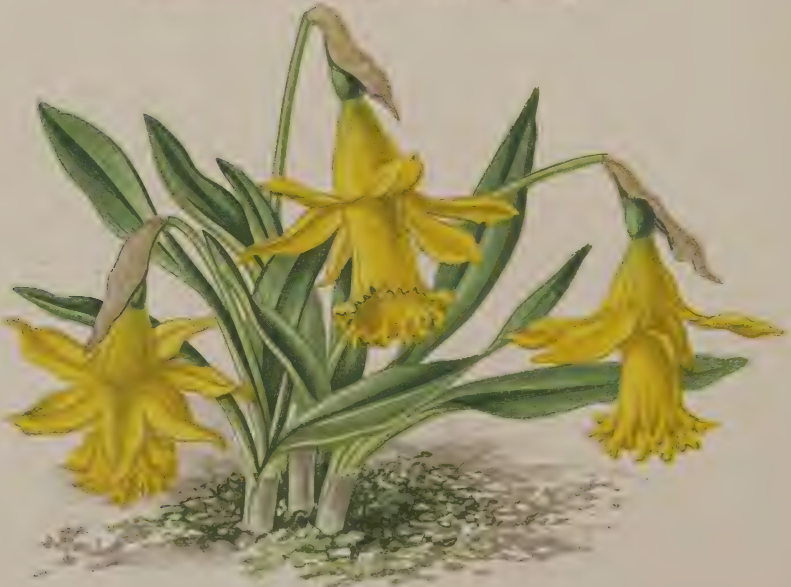

BULBOCODIUM VERNUM.

NARCISSUS MINOR.

XXXV

BULBOCODIUM VERNUM.

PLATE XXXV.—FIG. I.

Bulbocòdium vérnum, LINNÆUS. The Spring-flowering Bulbocodium.
Natural Order—MELANTHACEÆ.* The Melanthium Family.

THE only two known species of *Bulbocòdium* are pretty dwarf bulbous plants, resembling very much the Cròcus and the Cólchicum, but differing from the former in having six stamens, and from the latter (to which they are most nearly allied) in having one style instead of three. The generic name is derived from *bulbos*, a bulb, and *kodion*, wool, in allusion to the bulb being enveloped in a woolly covering.

B. vérnum,† which was introduced from Spain before 1629, is one of our earliest spring-flowering bulbs, producing its beautiful bright purple flowers, the tint of which varies very much, in February and March, before the leaves, which are not fully developed till after the flowers have past. Grown in a mass on rockwork, or in a border devoted to early spring flowers, this bulb will produce a striking effect. The most suitable soil for it is a good sandy loam. It is easily increased by dividing the bulbs in the autumn.

I have to express my acknowledgements to Messrs. Backhouse and Son for the opportunity of figuring this plant.

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* The character of the order *Melanthàceæ* is given in page 52.

† The *Cólchicum vérnum* of Bauhin; the Meadow Saffron of the Spring of Parkinson.

NARCISSUS MINOR.

PLATE XXXV.—FIG. II.

Narcíssus mìnor, Linnæus. The Dwarf, or Smaller Yellow Daffodil.
Natural Order—Amaryllidaceæ.* The Amaryllis Family.

Many of the very beautiful bulbous plants forming the genus *Narcíssus* are well known and greatly admired. The flowers† of the most common species *(N. Pseùdo-Narcíssus)*,—

> ———"The Daffodils
> That come before the swallow dares, and take
> The winds of March with beauty,"‡—

indeed, are universally known and prized.¶ Some of the species are very fragrant, especially the Jonquil *(N. Jonquílla,)* and the Polyanthus Narcissus *(N. Tazétta*‖*)*; and all of them are easily cultivated in moist sandy loam. Several force well, either in pots of earth, or in glasses filled with water; and for this purpose large quantities of the bulbs are annually imported from Holland. The generic name is derived from *narke,* stupor, on account of the dangerous effects produced by the smell, even of the least perfumed kinds, upon the nerves. For this reason Narcissus was consecrated to the Furies, who, by means of it, were accustomed to stupify those whom they wished to punish.

[*] The character of the order *Amaryllidàceæ* is given in page 62.

[†] These are not only emetic, but a dangerous poison, occasionally producing serious consequences in infants if they are allowed to swallow them.

[‡] Shakespeare: *The Winter's Tale,* Act iv, Scene 3rd.

[¶] Though the *Daffodil,* or *Daffy-down-dilly,* as it is called by some, is often found wild in Britain, it appears somewhat doubtful whether it is really a native, or only

> "A garden-flower grown wild."

[‖] From *Tazza,* the Italian name for a cup.

N. minor is a very dwarf species, rarely growing to the height of six inches. It is a native of the Pyrenees, and different parts of Spain, and was introduced as long ago as 1629. It flowers in March and April, and is quite hardy. It should be planted with other very dwarf early spring-flowering bulbs in sunny open situations.

For an opportunity of figuring this very pretty little Daffodil, I am indebted to Messrs. Backhouse and Son.

FUMARIA DENSIFLORA.

PLATE XXXVI.

Fumària densiflòra, A. P. de Candolle. The Dense-flowered Fumitory.
Natural Order—FUMARIACEÆ. The Fumitory Family.

FUMARIA is a small genus of annuals, two or three of the species being common British weeds.* One of these *(F. officinàlis)* was formerly considered a valuable antiscorbutic. The generic name is derived from *fumus,* smoke, in allusion to the disagreeable smell of the plants. Our English word *Fumitory* is from *Fumeterre,* the French name of the genus.

F. densiflòra, which was introduced from Montpelier in 1824, grows about a foot high, and produces its pretty pinkish flowers from May till July. It is easily increased by seed, which may be sown in the open garden in sandy or gravelly loam.

The figure in our plate is taken from a plant obligingly forwarded by Messrs. Backhouse and Son.

The order of which *Fumària* is the type *(Fumariàceæ)* consists of delicate annual or perennial plants, with the leaves, which are without stipules, much divided into distinct segments, and with very irregular purple, white, or yellow flowers. The calyx has two small and scale-like sepals. The corolla has four petals, in two pairs, the outer two united at the base, and often one or both spurred; the inner two narrow, their crested tips united over the stigma. There are six hypogynous stamens, united into two sets of three each, the middle

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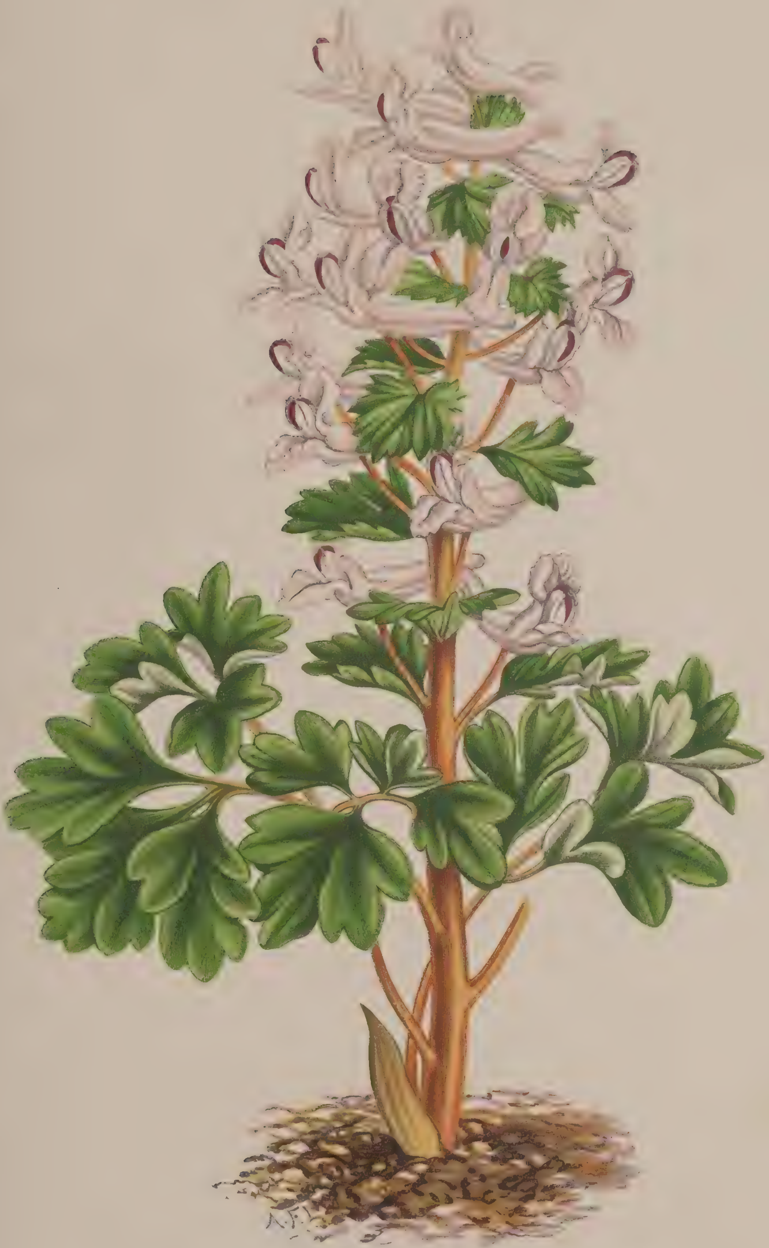
* Shakespeare, in *King Henry Vth.,* mentions "rank Fumitory;" and in *King Lear* he speaks of the plant as "rank Fumiter," and places it among the weeds with which Lear had crowned himself in his madness:

"Crown'd with rank Fumiter, and Furrow weeds,
With Hoar-docks, Hemlock, Nettles, Cuckoo-flowers,
Darnel, and all the idle weeds that grow
In our sustaining corn."



FUMARIA DENSIFLORA.

XXXVI

anther of each set having two cells, the lateral ones one cell each. The ovary is one-celled. The fruit is either a one or two-seeded nut, or a pod with several seeds.

The plants now included in this order were formerly combined with *Papaveràceæ* (the Poppy Family). Their principal range is in the temperate latitudes of the northern hemisphere, where they inhabit thickets and waste places. They have rather a smoky smell, and when broken yield a watery juice, which is slightly bitter and without any appearance of milkiness. They have very trifling medicinal properties. The best known genera, next to *Fumària,* are *Diélytra* and *Corydàlis.* The *Diélytra spectábilis,* which was introduced from China by Mr. Fortune, is one of the most graceful and beautiful plants of the order. The tuber of *Corydàlis tuberòsa* has been found to contain a peculiar alkali called Corydalin; and *C. bulbòsa* has a tuber which is somewhat aromatic, extremely bitter, slightly astringent and acrid, and was formerly used medicinally.

ARTEMISIA ALPINA.

PLATE XXXVII.—FIG. I.

Artemísia alpìna, Bieberstein. The Alpine, or changeable Artemisia.
Natural Order—Compositæ.* The Composite Family.

The numerous species of *Artemísia* are either herbaceous plants or shrubs, usually highly aromatic, with narrow, alternate leaves, which are generally much divided, and often white or grey, at least on the under side. The flowers are usually produced in small terminal leafy racemes or panicles. Several of the species are very dwarf, and are very suitable for planting on sunny ledges of rockwork, where the silvery tufts which they form will produce a striking effect. They grow best in sandy loam and grit, and they are readily increased by division, by cuttings, or by seed. Four of the species are British plants: one *(A. vulgàris)* is the common Mugwort, found on road-sides and in waste places, of which there is a garden variety (the *A. cœruléscens* of "English Botany"); while another *(A. Absínthium)* is the Wormwood or Absinth, which is of some value as a stomachic, and has been used with advantage in cases of gout. The seed of Wormwood is used by the rectifiers of British spirits, and the plant is a good deal cultivated on dry soil near Mitcham, in Surrey, for that purpose. The fragrant shrubby species which is known by the popular names of Southernwood and Old Man† *(A. Abrótanum)*, and which is so commonly found in our gardens, is a native of the South of Europe, Siberia, Syria, and China. It is used on the Continent in making beer. Tarragon, celebrated for its excellence in pickles, and in the medication of vinegar, is the *A. Dracúnculus*. Two Alpine species *(A. Mutellìna*—which is intermediate in quality between Tarragon and Wormwood—and *A. spicàta)* furnish between them the bitter aromatic

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* The character of the order *Compósitæ* will be found in page 16.

† The name of Old Man, doubtless has reference to its grey and powdery appearance. In French the plant is called *la garderobe*, from its being used to prevent moths from getting into clothes-presses and wardrobes.

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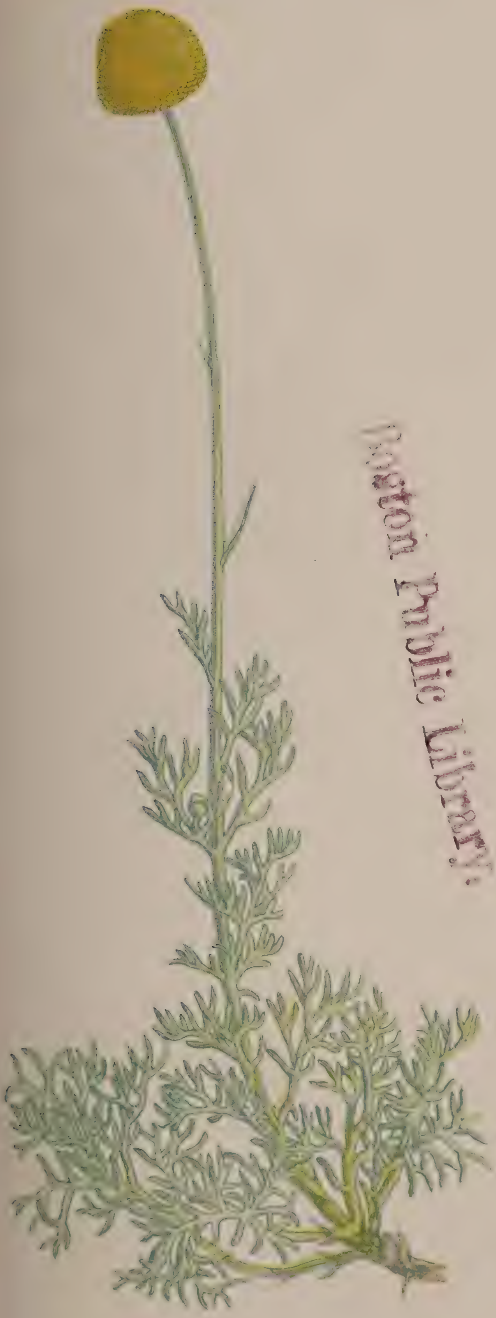
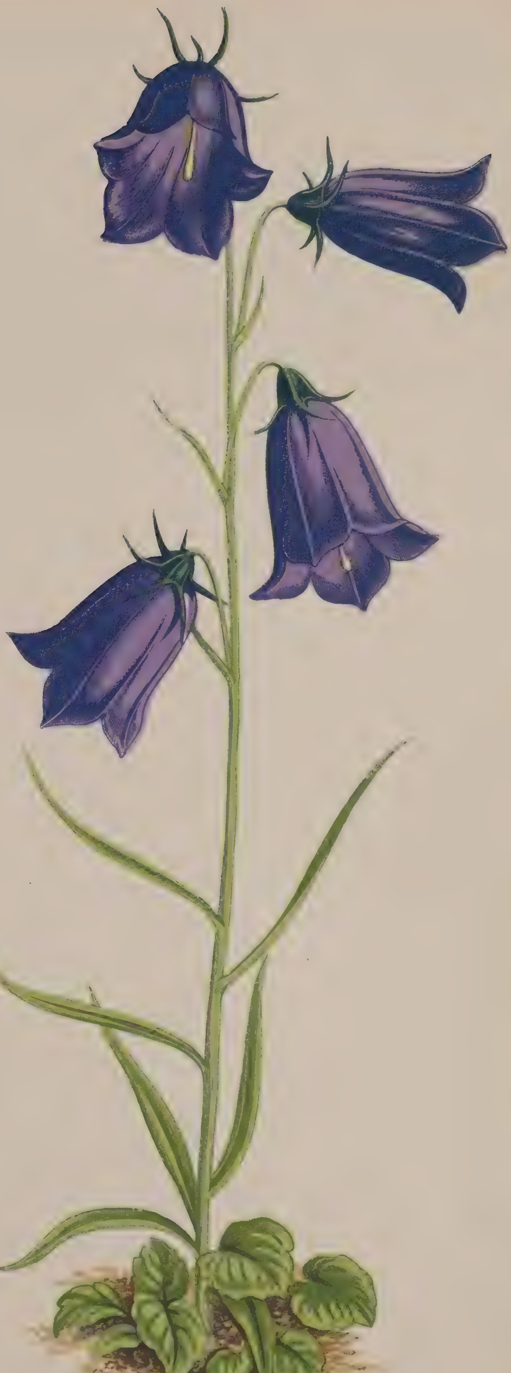


ARTEMISIA ALPINA.



CAMPANULA [illegible]

XXXVII.

liqueur called *Crème d' Absínthe.* *A. acética,* a Persian species, is reported to have the odour of strong vinegar. *A. chinénsis* and other species yield the Moxa of China, a substance which is much used among the Chinese as a cautery, by burning it upon parts affected with gout and rheumatism. The leaves of *A. maderaspatàna* are esteemed by the Indian doctors a valuable stomachic medicine: they are also sometimes used in antiseptic and anodyne fomentations. *A. índica* is considered in India a powerful antispasmodic.

Artemísia, it is generally maintained, is in honour of Artemis, one of the names of Diana, the goddess of hunting and patroness of chastity. Pliny, however, informs us, that in his time there was an opinion that the plant was named after Artemisia, the Queen of Mausolus, King of Caria.

*A. alpìna** is a very ornamental dwarf species, forming dense silvery-grey tufts, and very suitable for planting on rockwork. It is a native of the Caucasus, and was introduced in 1804. The flowers appear in June and July.

The figure in our plate is taken from a plant kindly forwarded by Messrs. Backhouse and Son.

CAMPANULA HOSTII.

PLATE XXXVII.—FIG. II.

Campánula† *Hóstii,* Baumgarten. Host's Campanula, or Bell-Flower.
Natural Order—Campanulaceæ.‡ The Bell-Flower Family.

The *Campánula Hóstii* of Baumgarten is considered by Koch to be only a variety of the pretty little *C. rotundifòlia,*¶ and to be the same

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* *A. caucásica* of Willdenow.

† A diminutive of *campana,* a bell, on account of the form of the corolla, which resembles a little bell.

‡ The character of the order *Campanulàceæ* will be found in page 8.

¶ The graceful *Campánula rotundifòlia,* so abundant in every part of Britain, is

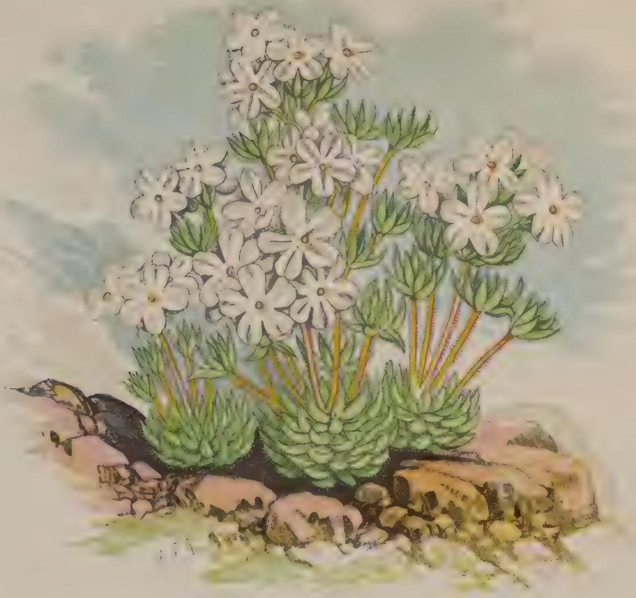
"The Hare-bell, bright and blue,
That decks the dingle wild,
In whose cerulean hue,
Heaven's own blest tint we view

as the *C. r. δ. lancifòlia* of A. P. de Candolle (the *C. r. β. renifórmis* of Persoon). It is a perennial, with rich purplish-blue flowers, which appear in July and August. It will be found very suitable for the prominent parts of rockwork, or for growing in pans or pots. The most suitable soil for it is a mixture of peat and loam; and it may be propagated by division of the roots or by seeds.

On days serene and mild.
How beauteous like an azure gem,
She droopeth from her graceful stem."
Miss Strickland.

Some writers have maintained that the Wild Hyacinth of our woods is the Harebell of the poets; but this can hardly be the case, as the stem of the Wild Hyacinth is much too thick and succulent to rise again elastic when trodden upon, as is described by Sir Walter Scott in *The Lady of the Lake.* In the eighteenth stanza of the first canto of his very beautiful poem, he says—

"A foot more light, a step more true,
Ne'er from the Heath flower dash'd the dew;
E'en the slight Hare-bell raised its head,
Elastic from her airy tread!"



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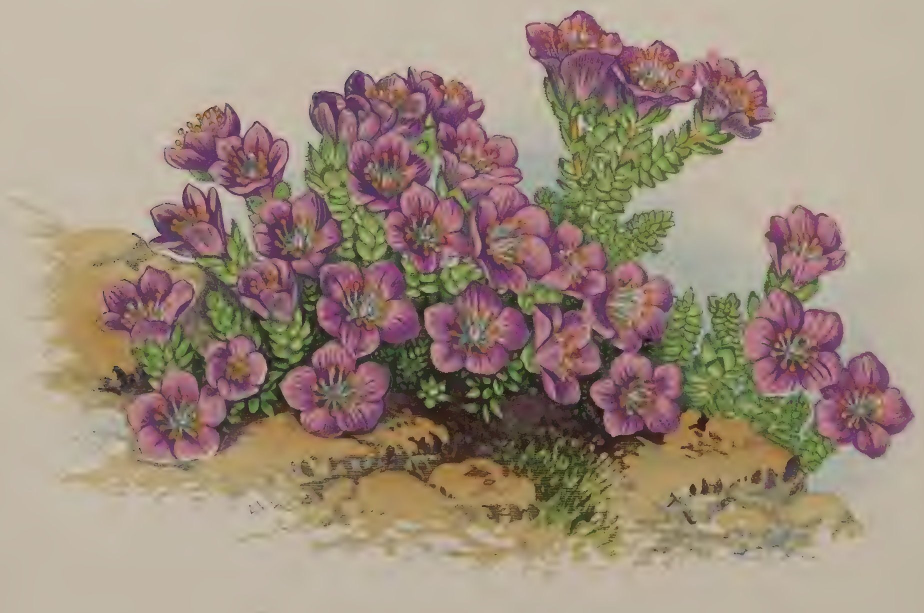

ANDROSACE VILLOSA.

SAXIFRAGA OPPOSITIFOLIA.

XXXVIII

ANDROSACE VILLOSA.

PLATE XXXVIII.—FIG. I.

Andrósace villòsa, LINNÆUS. The Shaggy Androsace.
Natural Order—PRIMULACEÆ.* The Primrose Family.

THE species forming the genus *Andrósace* (which is nearly allied to *Prímula*) are little elegant mountain plants, some being annuals, some biennials, and some perennials. They are all quite hardy in this country, and grow best when planted in the fissures of rockwork, where they can root deeply, in peaty loam, crushed limestone, and grit. Good drainage and an abundant supply of moisture at the roots should be provided for all the species; and the leaves of the very hairy kinds should be kept dry in winter. Some of the species may be readily propagated by carefully dividing the plants early in the autumn, or in spring; and the larger-growing kinds can be easily increased by cuttings made early in the autumn, and planted in well-drained pots filled with sandy peat and loam, the pots being placed in a cold frame and kept there during the winter. All the species can also be raised from seed, which should be sown in pots and placed in a cold frame. As the seeds of nearly all the *Primulàceæ* are slow in germinating, it is best to sow them as soon as possible after they are ripe.

The generic name is derived from *aner andros*, a man, and *sakos*, a buckler, in allusion to the round hollowed leaf of the common *Andrósace* having been compared to the buckler of the ancients. It is supposed that the *Andrósace* of Pliny and others must have been something very different.

The beautiful little *A. villòsa* is a native of the Austrian Alps, the Pyrenees, and the mountains of Dauphiné, and was introduced in 1790. It is one of the smallest of the perennial species, forming close tufts, and very suitable for planting on rockwork in sunny exposed spots, or for growing in small pots or vases. The narrow oblong leaves, which are clothed with silky whitish hairs, are arranged in small rosettes. The flowers, which are pure white with a purplish-red or yellow centre, are produced in small umbels, on stems two or three inches high, in May, June, and July. This is one of the species which should have the silky leaves kept dry in winter. The plant does best in crushed limestone with grit, and it is increased by seeds.

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* The character of the order *Primulàceæ* will be found in page 14.

For an opportunity of figuring this very pretty little alpine, I am indebted to Messrs. Backhouse and Son.

SAXIFRAGA OPPOSITIFOLIA.

PLATE XXXVIII.—FIG. II.

Saxífraga oppositifòlia, LINNÆUS. The Opposite-leaved, or Purple Mountain Saxifrage.

Natural Order—SAXIFRAGACEÆ.* The Saxifrage Family.

OF all the species of the extensive genus *Saxífraga,* perhaps *S. oppositifòlia* is the most distinct and beautiful, and, being one of the very earliest harbingers of spring, it is one of the most cheering and acceptable of alpine plants. If a few mild days should occur towards the end of February or at the beginning of March, the mossy cushions of this Saxifrage soon present a brilliant glow of the richest purple. It is common throughout the whole of the north of Europe, and in some parts of Asia: it is found on several of the Welsh and Scotch mountains, and also on hills in Yorkshire. It is a perennial, growing only an inch or two high, and remaining green through the winter, the leaves, which are small and crowded, forming dense cushions, and the large solitary bright purplish rose-coloured flowers, on short erect slender stems, being often produced in such abundance as quite to hide the leaves. It is a most suitable plant for rockwork, especially for the sloping parts; care being taken to choose spots fully exposed to the sun, and to have a good depth of well-drained but moist fibrous loam, gravel, and grit, in which the roots can grow freely. It is increased by division.

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* The character of the order *Saxifragàceæ* has been already given in page 40.

Of this lovely little Saxifrage there are the following three varieties, viz: *S. oppositifòlia álba,* which has pure white flowers; *S. o. màjor,* which has flowers twice the size of those of the species, and of a clear rose-colour; and *S. o. pállida,* the flowers of which are of a very pale pink or flesh-colour, and produced in the greatest profusion. This last variety was discovered by the Messrs. Backhouse on the crags of Caernedd Dafydd, North Wales.

ANEMONE STELLATA.

PLATE XXXIX.

Anemòne stellàta, Lamarck. The Star-like Anemone, or Wind-flower.
Natural Order—Ranunculaceæ.* The Ranunculus, or Crowfoot Family.

Most of the species of *Anemòne* are hardy plants with very showy flowers. The numerous varieties of *A. coronària* (the Poppy Anemone) are well known and very popular florists' flowers, much valued for their hardy nature, their brilliant colours, and also because they will flower at almost any period of the year, according to the time the roots are kept out of the ground, and the season when they are replanted. The usual time of planting is September or October, but by planting every month, a constant succession may be secured throughout the year. Anemones grow best in a mixture of deep rich loam and sand; and they are readily increased either by division of the tuberous roots, or by seeds.

The generic name is derived from *anemos*, the wind, because the greater part of the species grow wild in elevated places much exposed to the wind.

A. stellàta (commonly called *A. horténsis*) is a very beautiful species from the South of Europe, introduced in 1597, and very suitable for beds in the early spring garden, for the mixed border, or for planting in warm sunny well-drained spots on rockwork. There are several varieties with the star-like flowers (some of which become double) of different shades of colour, one *(A. s. fúlgens)* being of a most brilliant scarlet,—a colour invaluable in flower gardens in early spring.

I have to thank Messrs. Backhouse and Son for kindly forwarding the plant from which the figure in the plate is taken.

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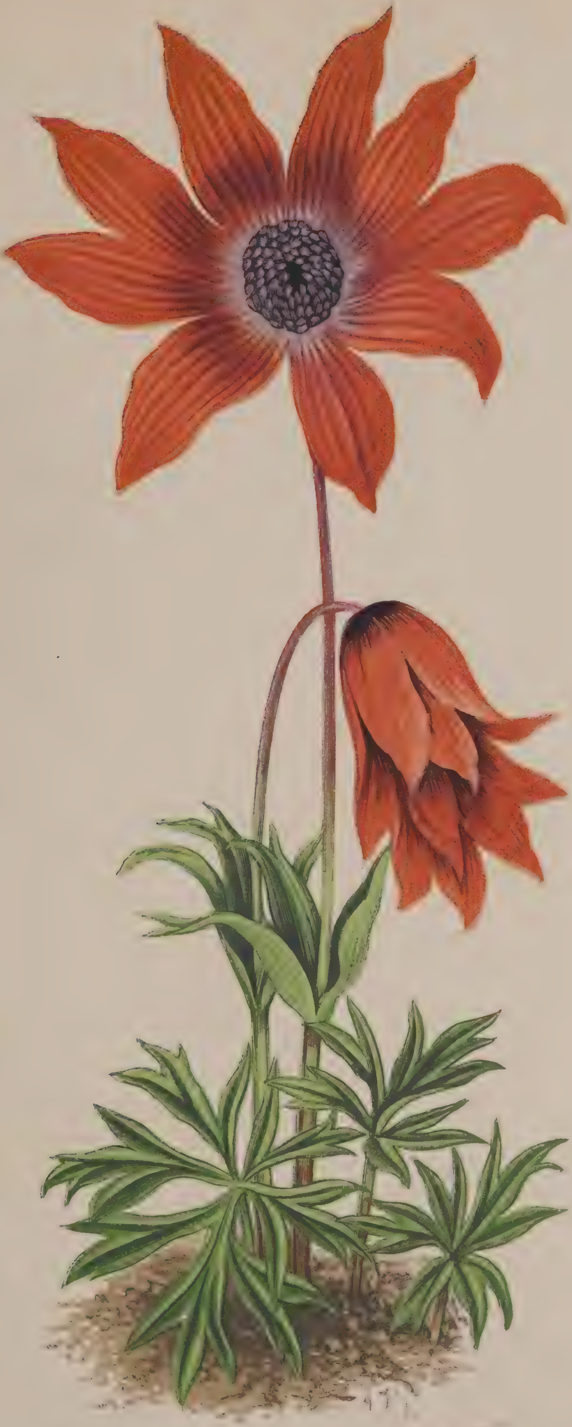
* The character of the order *Ranunculàceæ* will be found in page 6.



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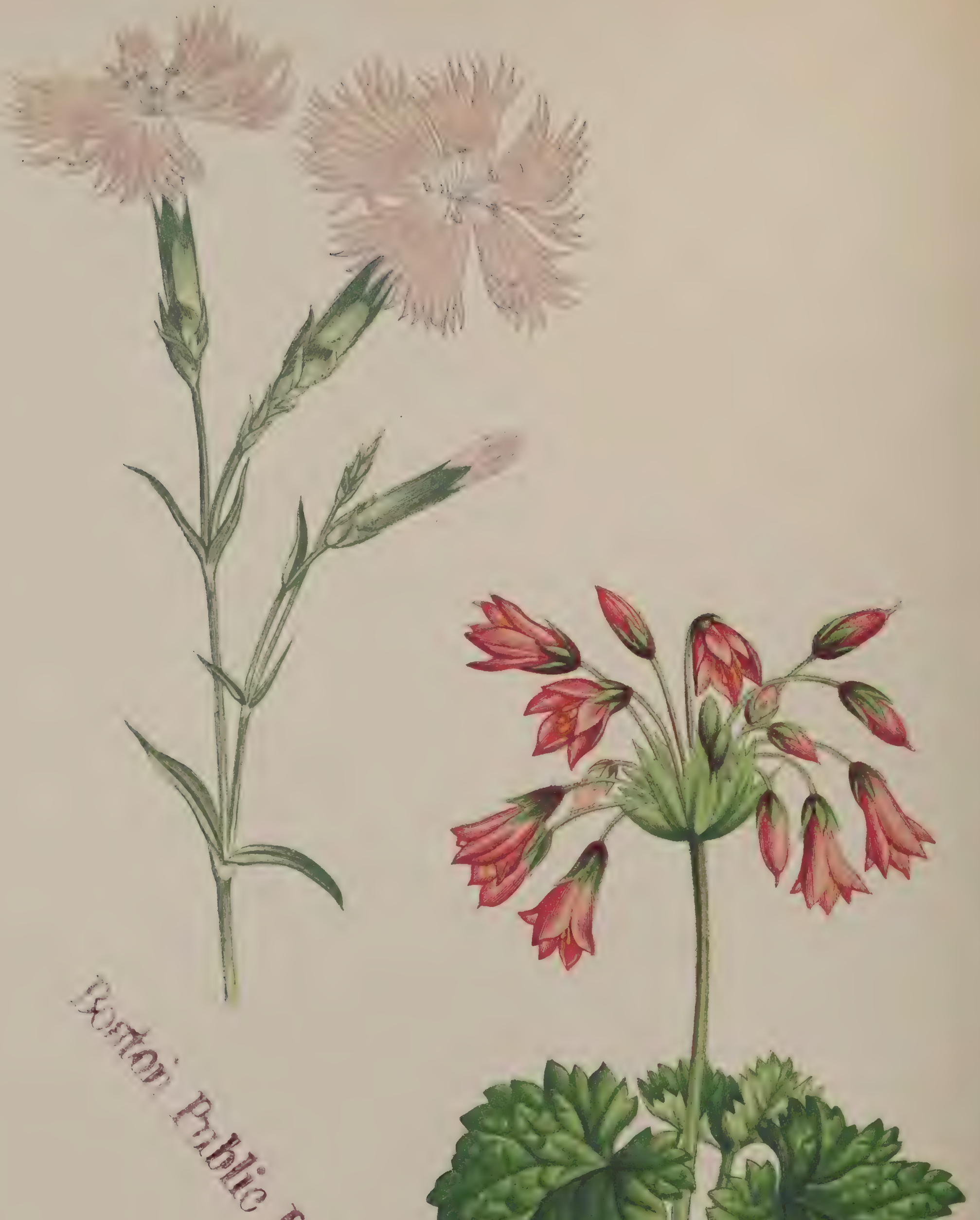
ANEMONE STELLATA (HORTENSIS)

XXXIX



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[illegible] GALLICUS. CORTUSA MATTHIOLI.

XL

DIANTHUS GALLICUS.

PLATE XL.—FIG. I.

Diánthus gállicus, PERSOON. The French Pink.
Natural Order—CARYOPHYLLACEÆ.* The Pink and Carnation Family.

THE *Diánthus gállicus* of Persoon is very nearly allied to the Sand Pink (*D. arenàrius*). It is a dwarf perennial from the South of France, with slender stems, light green leaves, and delicate pale pink fragrant flowers, the petals of which are so deeply cut as to appear fringed. It should be planted in sandy loam, and will be found suitable either for prominent places on rockwork or for the mixed border, care being taken that it has a good supply of water during the summer. It is readily propagated by cuttings. The flowers appear from July to September.

I am indebted to Messrs. Backhouse and Son for kindly forwarding the plant from which the figure in the plate is taken.

CORTUSA MATTHIOLI.

PLATE XL.—FIG. II.

Cortùsa Matthìoli, LINNÆUS. The Common Bear's-Ear Sanicle.
Natural Order—PRIMULACEÆ.† The Primrose Family.

THE genus *Cortùsa*, which is very nearly allied to *Prímula*, was named in honour of J. A. Cortusus, a Professor of Botany at Padua in the sixteenth century, who first discovered the plant in the Valle-Stagna, in the territory of Vicenza; while in the name of the only known species, the botanist who first described it (Matthiolus) is commemorated.

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* For the character of the order *Caryophyllàceæ*, see page 1.

† The character of the order *Primulàceæ* is given in page 14.

Though this little plant was introduced in 1596, it is still not very generally found in collections. It is a native of Austria, Italy, and Siberia, growing in moist and shady places on mountains. A virtue is assigned to the plant by Matthiolus,* which, though of little use to the mountain nymph, may, perhaps, recommend it to the notice of the pale-faced belles of crowded cities: he says that if the leaves are applied to the cheeks, and kept there for some minutes, they produce a most beautiful colour, equal in delicacy to that of the finest rouge, which remains for some time, and then fades away, without injury to the skin.

The large lobed rather handsome leaves have the footstalks thickly covered with hairs. The rich dark purplish-crimson pendulous flowers are produced in April, May, and June, in small loose umbels borne on stems eight or ten inches high. The plant is a hardy perennial, and is best adapted for rockwork, requiring shade, and an abundant supply of moisture during the growing season. Rich moist loam or a mixture of loam and sandy peat will be found the most suitable soil for it; and it may be propagated either by dividing the roots early in the autumn, or by seed sown as soon as it is gathered.

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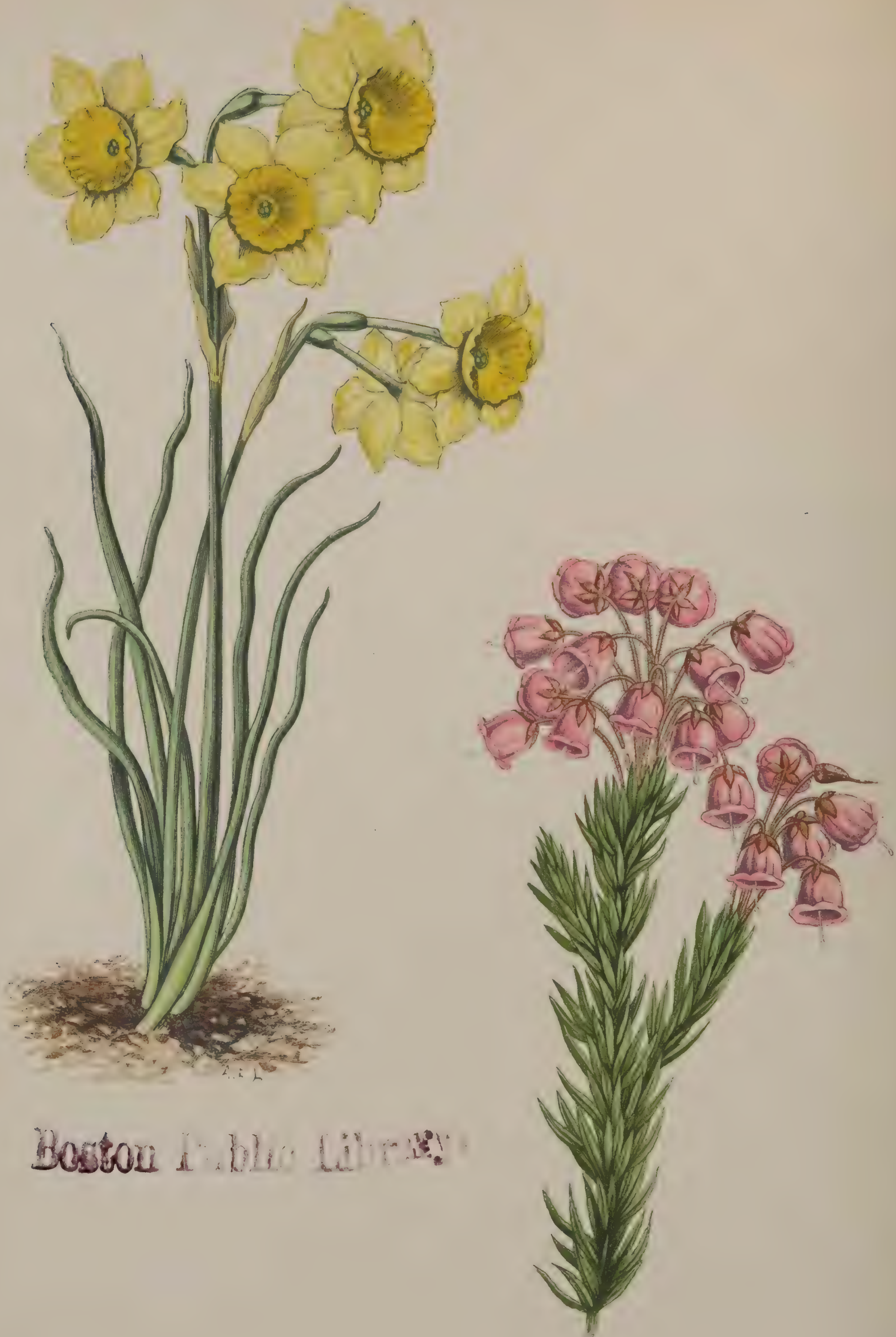
* There is a good figure and a long description of the plant in his Commentary on Dioscorides.



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ARCISSUS [illegible] [illegible]

XLI

NARCISSUS JUNCIFOLIUS.

PLATE XLI.—FIG. I.

Narcíssus juncifòlius, CLUSIUS. The Rush-leaved Daffodil.
Natural Order—AMARYLLIDACEÆ.* The Amaryllis Family.

THIS is a distinct and very pretty dwarf species from the Pyrenees, where it grows in stony pastures. The small round rush-like leaves, about six inches in length, are produced in bundles; and the delightfully fragrant bright yellow flowers, with the reflexed limb and the projecting cup of the same colour, are borne on stalks somewhat longer than the leaves, either singly or two or three on each scape. Tufts of this very beautiful little Daffodil produce a good effect on rockwork or on banks in early spring, care being taken to select warm and somewhat sheltered spots. The most suitable soil for it is a mixture of moist loam and sand; and it is increased by offsets from the bulbs.

The figure in our plate is taken from a plant kindly forwarded by Messrs. Backhouse and Son.

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* The character of the order *Amaryllidàceæ* is given in page 62.

MENZIESIA EMPETRIFORMIS.

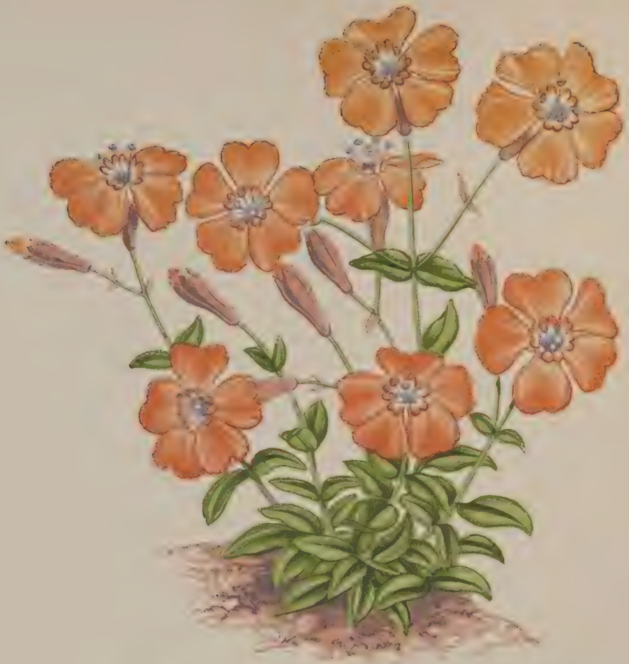
PLATE XLI.—FIG. II.

Menzièsia empetrifórmis, Sir J. E. Smith. The Empetrum-like Menziesia.
Natural Order—Ericaceæ.* The Heath Family.

This is a very beautiful dwarf, trailing, heath-like evergreen shrub, a native of North America, whence it was introduced in 1810. The leaves, which are small and numerous, are toothed at the margins. The rosy-purple bell-shaped flowers are produced in clusters in June and July. The plant usually grows about six inches high, and is very suitable for rockwork, succeeding best when planted in moist sandy peat in sunny fissures. In some collections it is found under the name of *Phyllódoce*† *empetrifórmis;* while in others it is known as *Menzièsia empetrifòlia.*

* The character of the order *Ericàceæ* will be found in page 23.

† See page 56.



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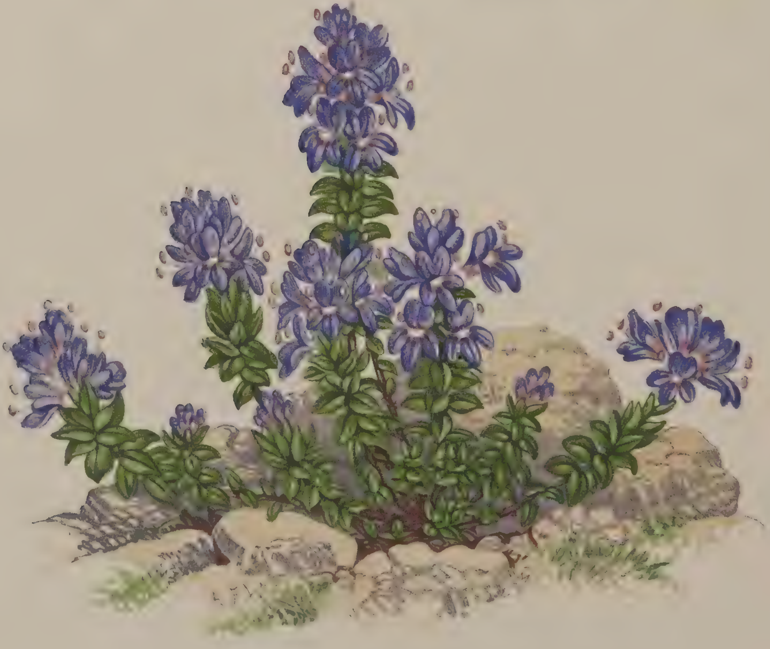

LYCHNIS LAGASCÆ.

POLYGALA CALCAREA.

LXII.

LYCHNIS LAGASCÆ.

PLATE XLII.—FIG. I.

*Ly'chnis Lagáscœ,** JOSEPH DALTON HOOKER. Lagasca's Lychnis.
Natural Order—CARYOPHYLLACEÆ.† The Pink and Carnation Family.

THIS is a very rare and beautiful dwarf perennial species from the subalpine region of the North-western Pyrenees (whence it has been introduced within the last three or four years), with short branching stems, and delicate bright rose-coloured white-eyed flowers, which are two thirds of an inch in diameter, and are produced in profusion in May and June.

Dr. Hooker says, in the "Botanical Magazine," "the tendency of the plant is to form a hemispherical mass in the pot, when it resembles in habit and colour, but on a large scale, one of those lovely pink Androsaces of the glacial regions of the Eastern Alps, which have hitherto all but defied our most skilful cultivators."

This Lychnis is admirably adapted for clothing the exposed parts of rockwork; or for growing in pots or vases to be placed on terraces, or in balconies or windows fully exposed to the sun. It will succeed well in moist peaty loam and grit; and it is easily increased by seeds.

I have to express my acknowledgments to Messrs. Backhouse and Son for an opportunity of figuring this rare and very desirable Alpine.

* *Petrocóptis Lagáscœ,* WILLKOMM.

† The character of the order *Caryophyllàceœ* is given in page 1.

VERONICA NUMMULARIA.

PLATE XLII.—FIG. II.

Verónica Nummulària, Goüan. The Moneywort-leaved Speedwell.
Natural Order—Scrophulariaceæ.* The Figwort Family.

Of the extensive genus *Verónica*, some of the hardy herbaceous species are very ornamental, and very suitable for planting in mixed borders in flower gardens (such as *V. amethy'stina*, *V. spicàta*, and *V. Teùcrium*); while three or four of the dwarf spreading kinds (such as *V. cándida*, *V. fruticulòsa*, *V. prostràta*, *V. saxátilis*, and *V. taúrica*) form pretty edgings for beds, and are also well adapted for rockwork or for growing in pots. Almost all the species thrive in any soil or situation: a few delight in peat soil, and some in moist situations. The perennial kinds are increased by division of the roots; the annual species (which are scarcely worth cultivating except in botanical collections) by seeds; and the greenhouse shrubby kinds (of which *V. decussàta*, *V. formòsa*, *V. nívea*, *V. speciòsa*, and *V. Lindleyàna* are some of the most striking) by cuttings. *V. officinàlis* (so commonly found throughout the whole of Britain) has been much recommended in Sweden and Germany as a substitute for tea, than which, Professor Martyn says, it is more astringent and less grateful. Withering prefers *V. Chamæ̀drys* (the Germander—another very common British species) for the same purpose. Several species were formerly in repute in medicine, and given in disorders of the lungs, but they are now laid aside by regular practitioners. *V. Beccabúnga*† (Brook-lime) is sometimes gathered with watercresses, with which it is often found in limpid streams, and used as a spring salad.

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* The character of the order *Scrophulariàceæ* will be found in page 4.

† Latinised from *bachbunge*, its German appellation: *bach* is a brook; *beck*, provincial English.

The derivation of the word *Verónica* appears very uncertain. It is said by some to be the name of a princess, or to have been altered from Betonica.* Linnæus says that it has been changed from Vetonica, the ancient Roman name for one of the provinces of Spain, and that it is applied to this genus from several of the species growing wild in that country. Other botanists derive it from *ver*, the spring; but this appears very improbable, as very few of the species flower before the middle of summer.

V. Nummulària is a very dwarf prostrate species, introduced from the Pyrenees in 1820, and very suitable for edgings and for planting on rockwork. It is a perennial, thriving best in moist loam and grit, and easily increased by division of the root. The flowers, which are of a deep blue, are produced in heads in June and July.

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* *Betónica* is derived from *Bentonic*, its name in Celtic; wherefore it appears that Pliny gave too much way to conjecture, when he wrote that Betonica or Vetonica was so called from the Vetones, a people who dwelt at the foot of the Pyrenees.

CAMPANULA MURALIS.

PLATE XLIII.—FIG. I.

Campánula muràlis, PORTENSCHLAG. The Wall, or Dalmatian Campanula.
Natural Order—CAMPANULACEÆ.* The Bell-flower Family.

THIS very pretty little Campanula was found on walls and rocks in Dalmatia, and was introduced about 1836. It is quite hardy in this country in all situations where it is not likely to be injured by damp, and is well adapted for rockwork. It is also very suitable for growing in pots or vases which are to be placed in balconies or windows. It is a perennial, growing about six inches high, and producing an abundance of its delicate blue flowers in September. It may be increased by dividing the roots in spring or autumn; or by cuttings of the young shoots, which will strike root under a handglass on a shady border, but the more readily if put on a hotbed. It may also be raised from seed. A mixture of peat, loam, and sand will be found most suitable for it; and care should be taken that ample drainage is secured, especially if it be grown in pots. Two states of this species (which is sometimes found under the name of *C. Portenschlagiàna*) are described by M. Alphonse de Candolle, the one quite smooth, the other velvety with down: the former is that most generally found in our gardens.

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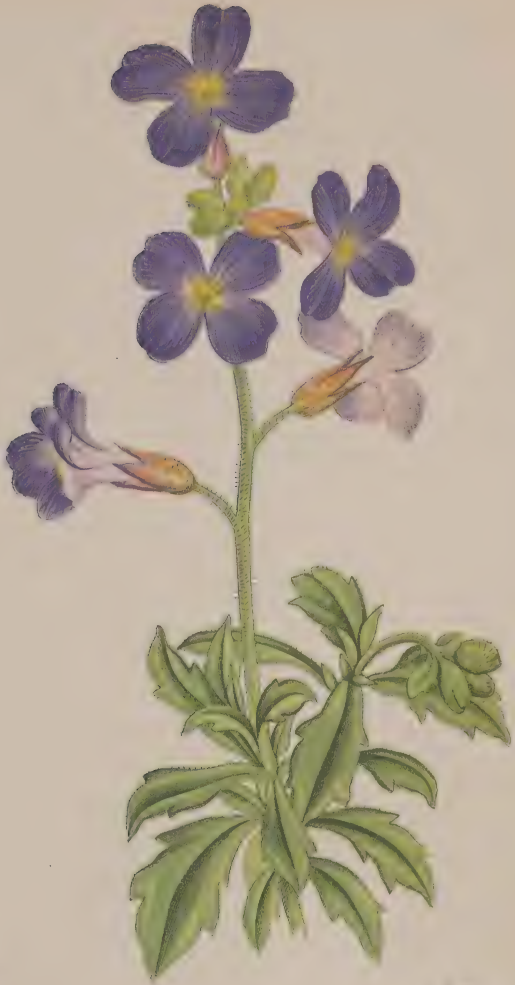
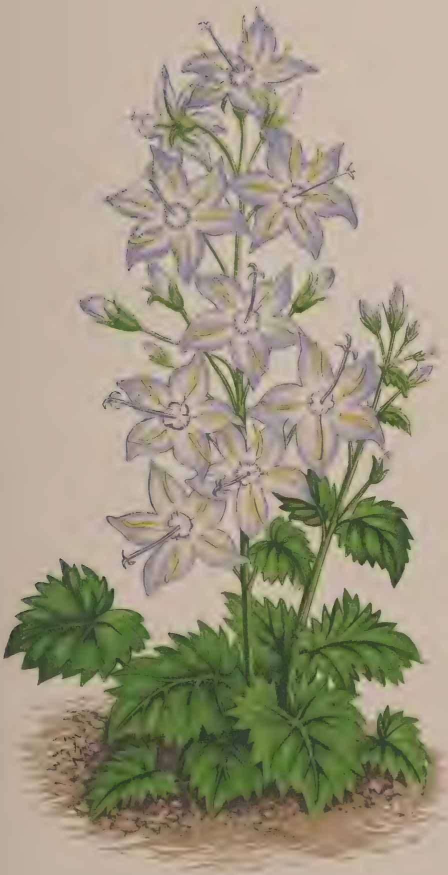
* The character of the order *Campanulàceæ* will be found in page 8.





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CAMPANULA MURALIS.

AUBRIETIA [illegible] GRANDIFLORA.

XLIII

AUBRIETIA DELTOIDEA β GRANDIFLORA.

PLATE XLIII.—FIG. II.

Aubrìetia deltoídea, A. P. de Candolle. The Deltoid* Purple Aubrietia.
Natural Order—Cruciferæ.† The Cruciferous Family.

The few species forming the genus *Aubrìetia* are dwarf evergreen hardy herbaceous plants, growing freely in light sandy loam, but not succeeding well in wet clayey soils. They form spreading tufts, and are particularly suitable for planting on rockwork, or as edgings to beds in early spring gardens. They may be propagated by cuttings made early in the summer, by division of the roots in the autumn, or by seeds sown as soon as they are ripe in a cold frame, or under a hand-glass.

The genus was named by Adanson in honour of Aubriet, the celebrated French botanical draughtsman.

A. deltoídea is a very desirable species, especially for town gardens, as it is not injured by smoke, and continues producing a profusion of its pretty purplish flowers from March till June. It is a native of the Levant, whence it was introduced in 1710, and then called *Aly'ssum deltoídeum.* It is now sometimes found under the name of *Farsètia deltoídea.* There are two varieties, viz. *A. d. grandiflòra* (figured in our plate) and *A. d. græ̀ca,* differing from the species only in having larger and more brilliant flowers. Both kinds are most suitable for planting on the sloping portions of rockwork having a northern aspect, and so is *A. Campbélli,* which is probably also only a variety of *A. deltoídea.*

My thanks are due to Messrs. Backhouse and Son for kindly forwarding the plant from which the figure in the plate is taken.

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[*] Deltoid-leaved,—shaped like the Greek Δ.

[†] The character of the order *Cruciferæ* is given in page 30.

DRABA GLACIALIS.

PLATE XLIV.—FIG. I.

Dràba glaciàlis, Hoppe et Koch. The Icy Whitlow Grass.
Natural Order—Cruciferæ.* The Cruciferous Family.

This is a pretty little perennial species with yellow flowers, introduced from Siberia in 1826. Tufts of it have a very good effect on rock-work. The flowers appear in June and July.

Messrs. Backhouse and Son obligingly forwarded the plant from which the figure in our plate is taken.

PRIMULA VISCOSA.

PLATE XLIV.—FIG. II.

Prímula viscòsa, Allioni. The clammy Primrose.
Natural Order—Primulaceæ.† The Primrose Family.

This very beautiful little Primrose is a native of the Alps and the Pyrenees, whence it was introduced in 1792. The leaves are of a very dark green, toothed, covered with glandular hairs, and viscid on both sides. The flower-stalks, which are also viscid, are very short. The lovely rosy-purple flowers appear in April. The plant is very suitable for rockwork, growing best in a mixture of peat and loam with a good proportion of sand, the roots requiring a good supply of water during dry weather. It is easily increased either by division or by seed. It is sometimes found in collections under two other names, viz.: *P. villòsa* and *P. ciliàta*.

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* The character of the order *Crucíferæ* will be found in page 30.

† The character of the order *Primulàceæ* is given in page 14.

ERINUS ALPINUS.

PLATE XLV.—FIG. I.

Erìnus alpìnus, Persoon. The Alpine, or Smooth-leaved Erinus.
Natural Order—Scrophulariaceæ.* The Figwort Family.

Erìnus is a small genus of beautiful little alpine herbaceous plants, well adapted for warm, damp, though well drained, situations on rock-work, or for growing on old walls or ruins.

Under the name of *Erìnus,* Dioscorides describes an aquatic plant with a white flower, black seeds, and a milky stem. From the last circumstance the genus has derived its name; *erinos* signifying a wild fig-tree. The plant of the ancients had no resemblance to that called Erinus by the moderns.

E. alpìnus is a very pretty interesting little plant, with lively purple flowers, a native of the more mountainous parts of Switzerland, Germany, and the South of France, and introduced into this country in 1739. It forms close tufts, and is most suitable for growing on rock-work: it should be planted in rough peat and loam mixed with grit, in a warm, moist, though well drained, spot. That it will grow well on an old wall may be seen at the Chelsea Botanic Garden, where the plant has probably fixed itself ever since the days of Philip Miller. Though quite hardy, it is very liable, when kept in a pot, to suffer from too much wet, and it should, therefore, when thus grown, have the protection of a cold frame in winter. The plant is increased without difficulty by dividing its roots in the autumn, or by seeds.

There are three varieties of this species: one with pure white flowers; another has the flowers of a bright rosy pink, and larger than those of the species; while a third is the *E. hirsùtus,* which is covered with long whitish pubescence.

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* The character of the order *Scrophulariàceæ* will be found in page 4.

CROCUS AUCHERI.

PLATE XLV.—FIG. II.

Cròcus Auchèri, Boissier. Aucher's Crocus.
Natural Order—Iridaceæ.* The Iris Family.

This is a very pretty dwarf species from the mountains of Greece, with the flowers, which are produced early in the spring, of a deep orange colour. It very much resembles *Cròcus aúreus*, and also *C. chrysánthus*, under which latter name it is sometimes found in collections. If planted on rockwork, prominent sunny spots should be chosen for it.

I have to thank Messrs. Backhouse and Son for giving me an opportunity of figuring this Crocus, I believe for the first time.

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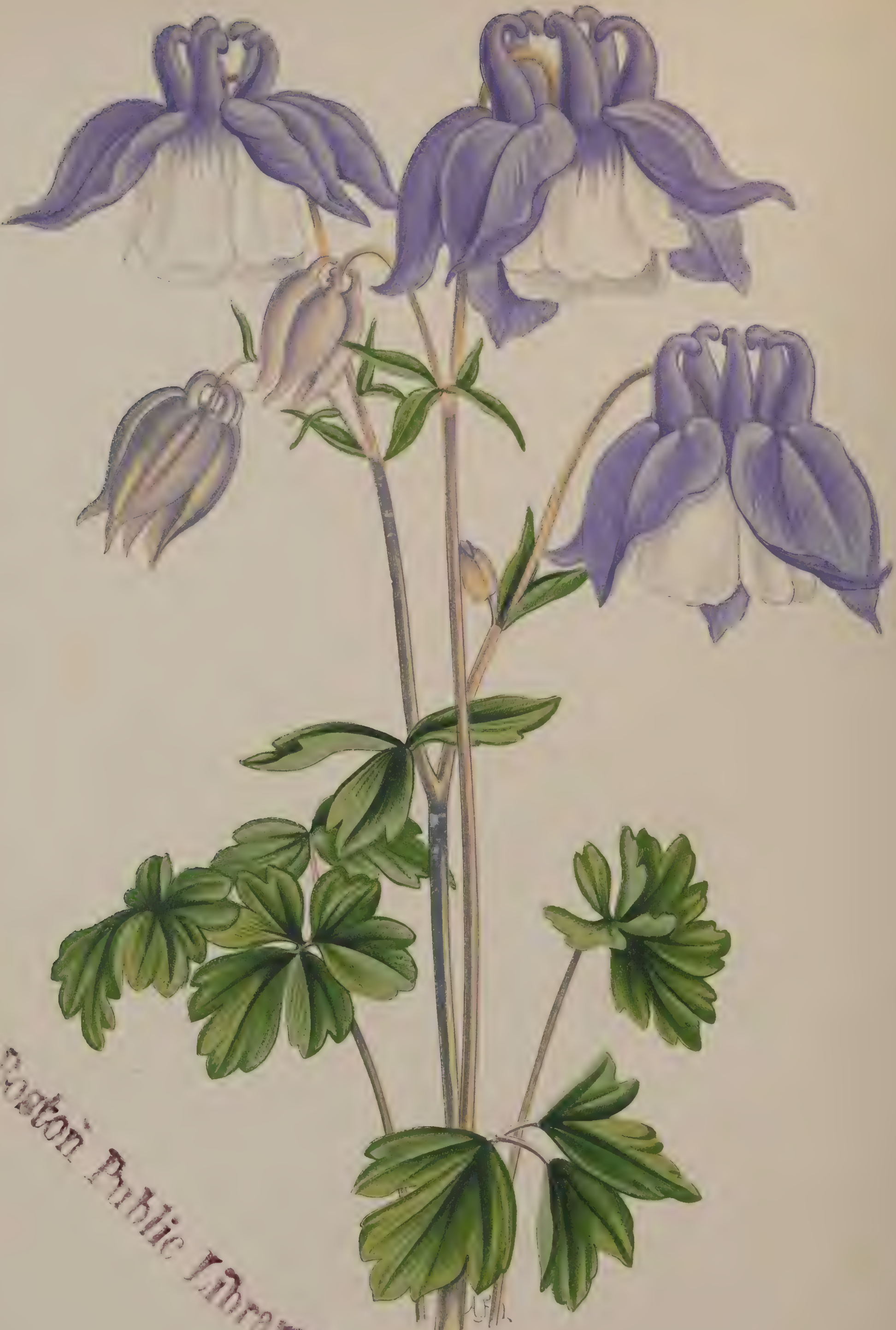
* The character of the order *Iridàceæ* will be found in page 69.



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AQUILEGIA ALPINA.

XLVI

AQUILEGIA ALPINA.

PLATE XLVI.

Aquilègia alpìna, LINNÆUS. The Alpine Columbine.
Natural Order—RANUNCULACEÆ.* The Ranunculus, or Crowfoot Family.

THIS very beautiful Columbine was introduced from Switzerland in 1731, and should be in every collection. It grows from a foot to eighteen inches high, and produces its very large showy dark azure or blue slightly nodding flowers in May and June. It should be planted in a moist situation in deep sandy loam, either in the mixed border or among the taller-growing plants on rockwork. It may be increased either by division of the roots or by seeds. The seeds should be sown as soon as they are ripe: the young plants will then become strong before winter, and will flower the following summer. There is a variety the flowers of which have a white centre.

The figure in our plate is taken from a plant kindly forwarded by Messrs. Backhouse and Son.

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* The character of the order *Ranunculàceæ* will be found in page 6.

MYOSOTIS RUPICOLA.

PLATE XLVII.—FIG. I.

Myosòtis rupícola, SIR J. E. SMITH. The Rock Scorpion Grass, or Alpine Forget-me-not.
Natural Order—BORAGINACEÆ. The Borage Family.

THE species of *Myosòtis* are little annual or perennial plants, most of which have very pretty blue flowers. The common Forget-me-not *(M. palústris)* is the best known species—a favourite with most persons. All the species succeed best in rather moist rich loam and sand; and they are propagated by seeds, by cuttings, or by division of the roots.

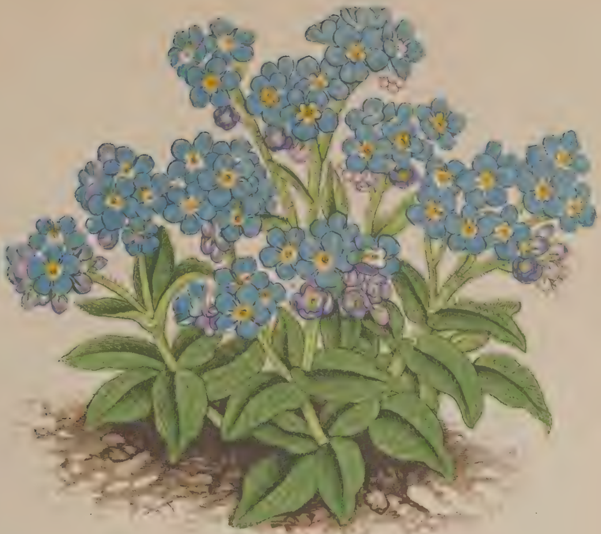
The generic name is from *mys, myos,* a mouse, and *otos,* an ear, in allusion to a fancied resemblance in the leaves to the ear of a mouse.

M. rupícola is a British alpine plant, found wild in only a few places in Scotland and the north of England, generally at an elevation of more than two thousand feet. It is one of the most beautiful species of the genus, with dark green hairy leaves, which form close tufts, and lovely brilliant blue fragrant flowers (frequently with a small yellowish eye), which begin to appear in May and June, and continue for some time. It is a very dwarf perennial, growing only two or three inches high, and succeeding best on rockwork in shady fissures, or on ledges having a northern aspect. It is easily increased by seed or by division.

By some *M. rupícola* is called *M. alpéstris,* though the plant bearing that name in continental nurseries is very different; and others regard it as being only a very dwarf and marked variety of *M. sylvática* (the Wood Forget-me-not).

I have to express my acknowledgments to Messrs. Backhouse and Son for enabling me to figure this very beautiful Forget-me-not.

The order to which *Myosòtis* belongs (*Boraginàceæ*) is nearly allied to *Labiàtæ.* It consists chiefly of herbaceous plants, with alternate exstipulate leaves, the surface of which is covered over with minute



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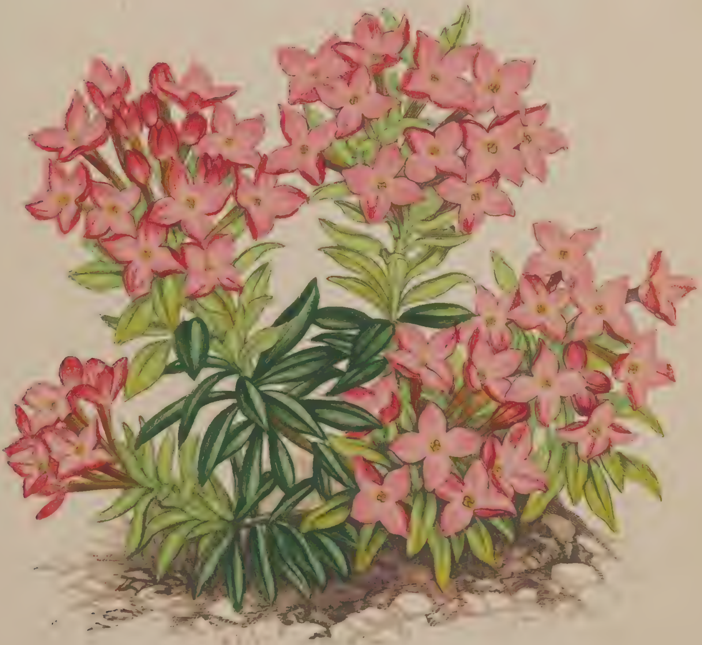
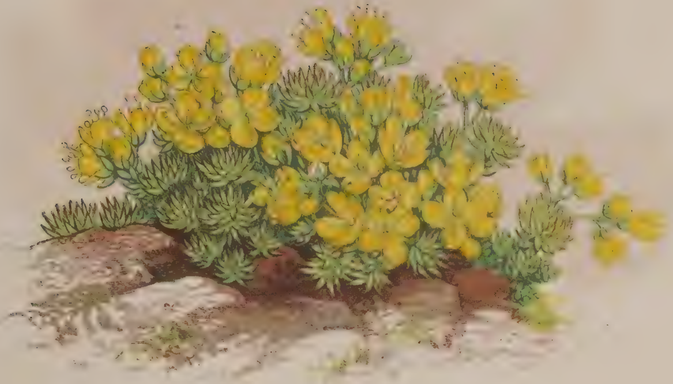


MYOSOTIS RUPICOLA.

DAPHNE CNEORUM.

XLVII



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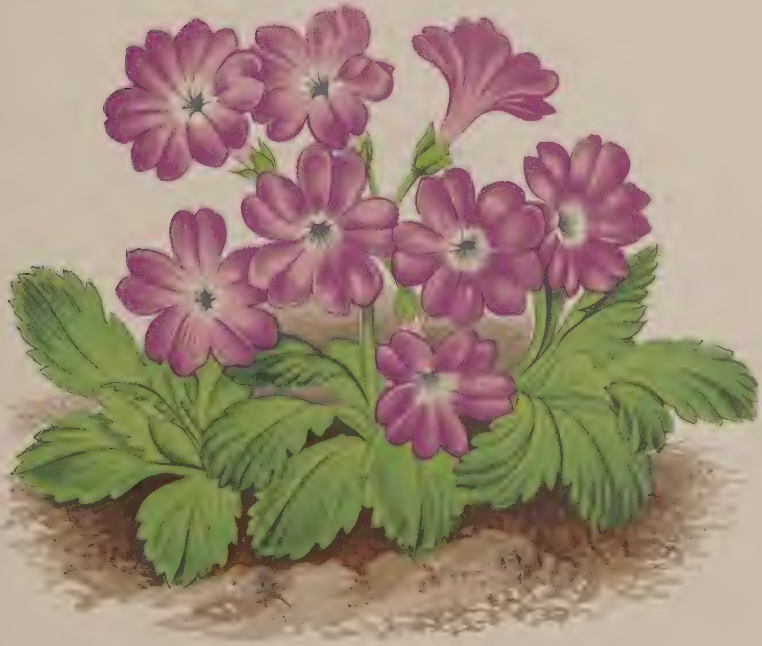
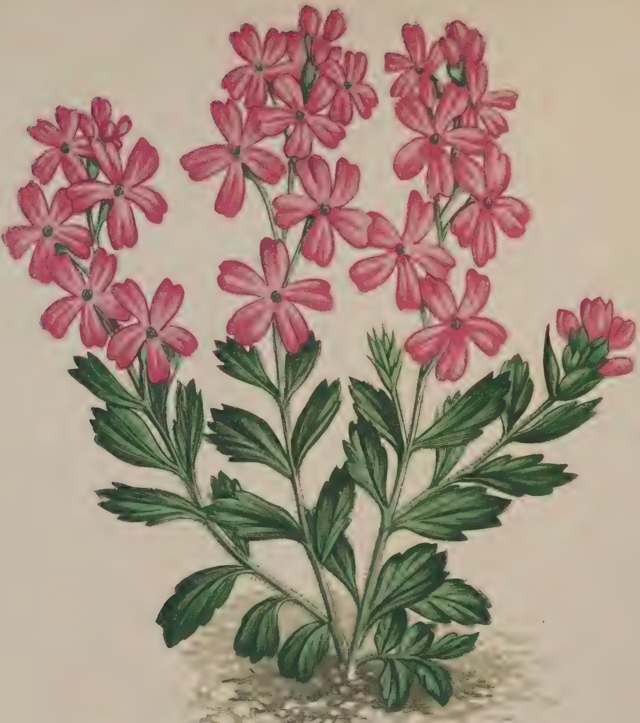


DRABA GLACIALIS.

PRIMULA VISCOSA.

XLIV



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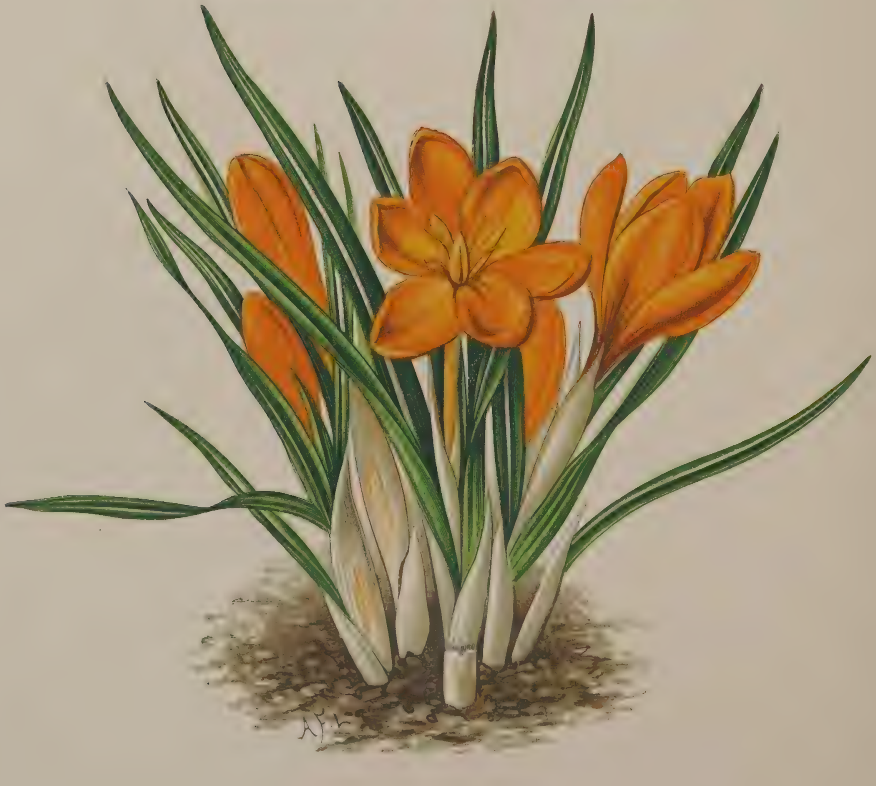

ERINUS ALPINUS.

CROCUS AUCHERI.

XLV

asperities consisting of hairs; and with the flowers arranged in one-sided spikes or racemes, rolled back when young, and usually forked or dichotomous,* occasionally solitary. The corolla is generally salver or funnel-shaped, with a five-lobed limb, and with five little scales just within the throat. There are five anthers, which are attached to the corolla (within its tube and alternating with its divisions); and a slender simple style terminating in a two-lobed stigma. The calyx is tubular (with five divisions or teeth), and remains on till the fruit is ripe; the teeth of the calyx contracting at the point so as to cover the ripe carpels. Each flower has also four distinct little nuts or seeds, as they are commonly called. These nuts frequently appear as though a hole had been bored in them at the base; and they are sometimes striped or twisted.

The species contained in the order are found abundantly in all the southern parts of Europe, the Levant, and Middle Asia; less frequently on approaching the arctic circle, and almost disappearing within the tropics. In North America they are less abundant than in Europe. The flowers of many of the species are very beautiful. The roots of several of the plants afford a red colour, which is useful in dyeing.

Besides *Boràgo* (the Borage), which gives the name to the order, and *Myosòtis,* other well-known genera are, *Heliotròpium* (the Heliotrope), *Lithospérmum* (the Gromwell), *Pulmonària* (the Lungwort), *Sy'mphytum* (the Comfrey), *Cerínthe* (the Honey-wort), *E'chium* (Viper's Bugloss), *Asperùgo* (German Madwort), *Anchùsa* (Bugloss), *Omphalòdes* (Venus's Navel-wort), and *Cynoglóssum* (the Hound's Tongue).

DAPHNE CNEORUM.

PLATE XLVII.—FIG. II.

Dáphne Cneòrum, Linnæus. The Trailing Daphne, or Garland-flower.
Natural Order—Thymelaceæ. The Spurge Laurel Family.

The genus *Dáphne* consists of small shrubs, mostly evergreen, with very beautiful fragrant flowers, natives chiefly of Europe, but partly also of the cooler parts of Asia, including Japan and China. All the species grow best in a mixture of rich loam and peat earth, and the exotic kinds are readily increased by grafting on the Common Spurge Laurel *(D. Laurèola)*, a British plant, which may be plentifully raised from seed. The pretty early-flowering shrub, the well-known Mezereon *(D. Mezèreum)* is another British species, very commonly found in flower in our gardens in February and March.

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* A stem that ramifies in pairs.

Dáphnē is considered by some botanists to have been the Greek name of the *Rúscus racemòsus*, or Alexandrian Laurel, into which it is fabled that Daphne, a nymph of Diana, was changed. Why the name has been applied to the shrubs now called *Dáphne*, it is not easy to say. It is stated in Rees's *Cyclopædia*, under *Laúrus*, that *L. nóbilis* "is certainly the *Daphnē* of Dioscorides, and consequently the Classical Laurel. It is still called by the same name among the modern Greeks:" this is also the popular belief. Supposing the *Daphnē* to have been the *Laúrus nóbilis*, or Bay tree, it is easy to account for its being applied to this genus, the *D. Mezèreum* being formerly called the dwarf Bay in England; and nearly all the species retaining the names of *laureole* and *laureola* in France and Italy. But by some it is maintained that *Dáphne* is from *daio*, to burn, and *phone*, a noise, in allusion to the crackling noise which the plants make when burning.

D. Cneòrum is a trailing evergreen shrub, growing about a foot high, and producing its beautiful bright pink or crimson deliciously sweet-scented flowers in terminal clusters in April and May, and again in September. The small, glòbose, white berries are seldom produced in England. This very desirable species is a native of Switzerland, Hungary, the Pyrenees, Mount Baldo, Germany, and France, and was introduced in 1752. On account of its dwarf habit, it is especially suitable for planting on rockwork, or for forming edgings to beds in pleasure grounds and shrubberies. It may also be grown in pots. For ordinary purposes it is propagated by layers; but, if taller plants are required, it may be grafted on *D. Laurèola* or *D. Mezèreum*. It thrives best in peat soil kept rather moist.

There are two varieties, one of which has white flowers, and the other has leaves with a narrow portion of yellow at the edges.

Most of the species included in the order to which *Dáphne* belongs *(Thymelàceæ)* are shrubby plants, found in India and South America, and various other parts of the world, but most abundantly at the Cape of Good Hope and in New Holland. The leaves are without stipules, alternate or opposite, entire, either smooth or silvery, and very neat. The flowers are white, yellow, or red, most commonly in clusters, occasionally solitary, and often very fragrant. The fruit is hard, dry, and nut-like, or drupaceous.

The great and striking feature of the plants of this order is the causticity of the bark, which acts upon the skin as a vesicatory, and causes excessive pain in the mouth if chewed. *Dáphne Mezèreum* is extensively used in medicine. In Germany the bark of the stem and larger branches is removed in spring, folded in small bundles, and dried for medicinal use. In this country the bark of the root is employed. Its taste is at first sweetish, but afterwards highly acrid. All the parts of the plant, indeed, are excessively acrid, and act as a local irritant poison. As a local irritant, Mezereon bark is employed in France, under the name of *Garou,* to produce vesication. In this country it is frequently employed as a topical remedy for toothache. Dr. Withering cured a case of difficulty of swallowing by Mezereon, which he directed to be chewed frequently. Dr. Cullen states that he has employed it with success in some cutaneous diseases. Similar qualities have been remarked in *Dáphne Laurèola, D. póntica, D. Gnídium,* and several other species. The wood is particularly soft; and the inner bark is easily separable, and, in one species, capable of being pulled out into a sort of network resembling lace, as in the Lace-bark Tree of Jamaica *(Dáphne Lagétta,* or *Lagétta linteària).* Of the other genera the best known are, *Dírca* (the Leatherwood), *Gnídia, Lachnæ̀a, Passerìna* (the Sparrow-wort), *Struthìola,* and *Pimelèa.* Though the seeds of the plants of this order are poisonous to man, birds eat them with impunity.

POLYGALA CALCAREA.

PLATE XLVIII.—FIG. I.

Poly'gala calcàrea, F. Schultz. The Chalk Milkwort.
Natural Order—Polygalaceæ.* The Milkwort Family.

This is a somewhat rare British plant, found chiefly on the chalk hills of the South-east of England. The flowers, which are produced in May and June in compact terminal racemes, are generally blue, but sometimes they are pink or white, as is the case also with the common Milkwort *(P. vulgàris).* The leaves form pretty rosettes, from which the flower-stems rise. Tufts look extremely well on rockwork—in sunny fissures. The plant requires a calcareous soil, and is increased by seed.

To Messrs. Backhouse and Son my thanks are due for kindly forwarding the plant from which the figure in the plate is taken.

SILENE ACAULIS.

PLATE XLVIII.—FIG. II.

Silène acaúlis, Linnæus. The Stemless Catchfly, Moss Campion, or Cushion Pink.
Natural Order—Caryophyllaceæ.† The Pink and Carnation Family.

This is one of the gems of our Alpine Flora. It is very common on the Scotch and Welsh mountains, and on those of the Lake District

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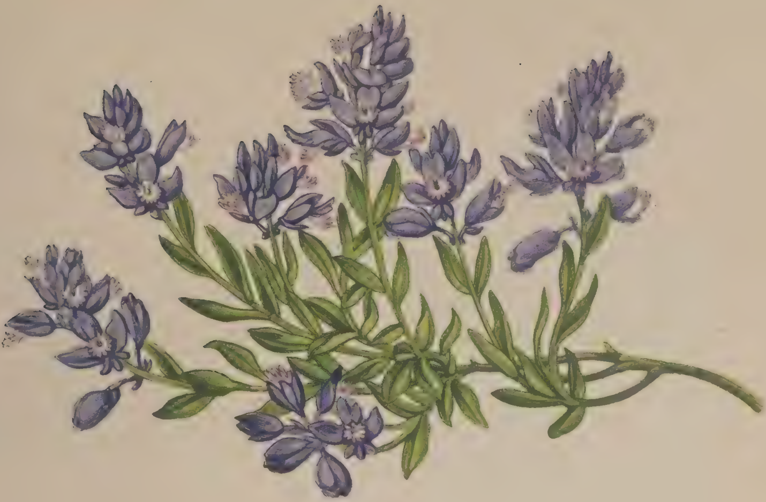
* The character of the order *Polygalàceæ* will be found in page 74.

† The character of the order *Caryophyllàceæ* will be found in page 1.



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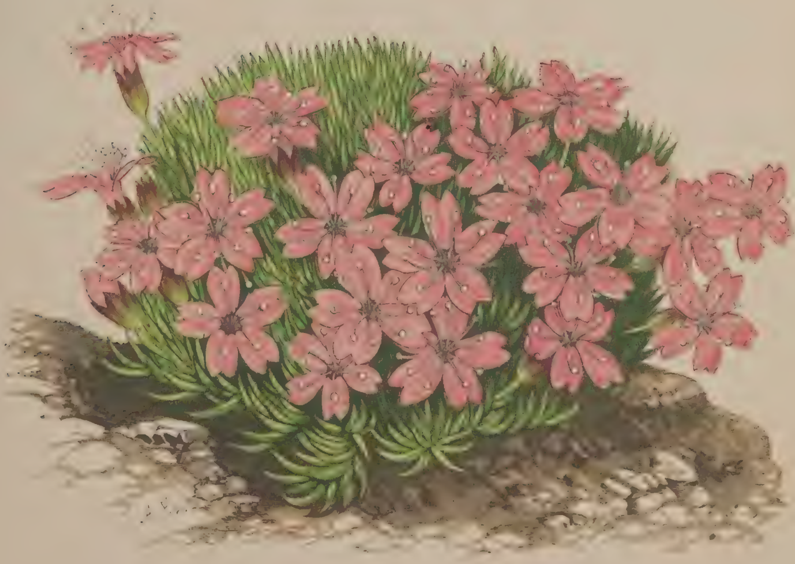

POLYGALA CALCAREA.

SILENE ACAULIS.

XLVIII

of England,* growing chiefly towards the summits, where it forms a thick carpet or turf of rich green, which, in the months of June and July, is beautifully dotted over with the bright purplish-crimson or rose-coloured flowers. This species is especially adapted for growing on rockwork, and it also does extremely well in pots and pans, in moist rich loam and sand. It is readily increased by division.

There are several varieties: one *(S. a. álba)* has white flowers; while two *(S. a. exscàpa* and *S. a. muscoìdes)* are dwarfer even than the species.

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* It is, indeed, very widely and generally distributed over the mountainous parts of Northern Europe, Asia, and North America.

ANEMONE NEMOROSA FLORE-PLENO.

PLATE XLIX.—FIG. I.

Anemòne nemoròsa flòre-plèno, Hort. The Double-flowered Common Wood Anemone.

Natural Order—Ranunculaceæ.* The Ranunculus, or Crowfoot Family.

The beautiful little Wood Anemone is one of the most common of our British Wild Flowers, as there is scarcely a wood or thicket in Great Britain, where there is marshy ground, in which it is not to be found. It is one of the first flowers of spring, as it is one of the most chaste and elegant—very aptly described by the poet:

"Nymph of the wood and forest glade!
In thy own fair vestal robes arrayed.
In the calm of the silent sylvan bowers,
'Tis sweet to gaze on thy drooping flowers.
Chaste and pure as the driven snow
Yet faintly tinged with a purple glow.
Like mountain crests
  On some Alpine height,
When the snow-drift rests
  In the evening light!"†

In early spring gardens this Anemone will be found most useful for beds, the pure white flowers (with the petals slightly tinged on the outside with purple) being very effective. It grows about six inches high, and should have plenty of moisture at the root. It is readily propagated by division in the autumn.

There are several very beautiful varieties of the Wood Anemone. That figured in our plate *(A. n. flòre-plèno)* has very handsome double white flowers, which are produced in great abundance, and are most

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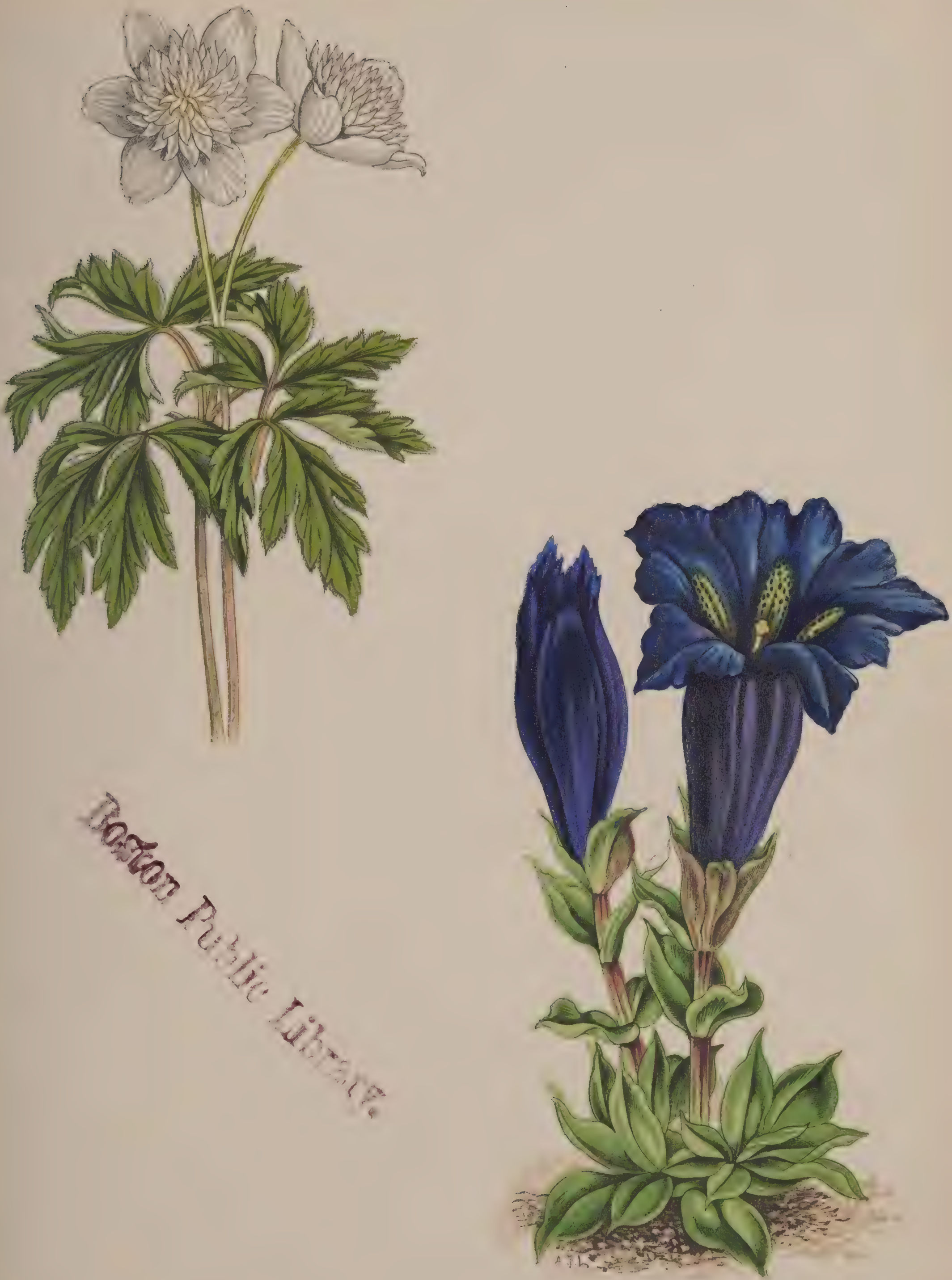
* The character of the order *Ranunculàceæ* will be found in page 6.

† *The Wild Garland.*



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XLIX

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useful for bouquets, as they keep fresh a long time after being cut. There is also a variety with double pink flowers; and one with single blue flowers. The last two are somewhat rare.

The figure in our plate is taken from a plant obligingly forwarded by Messrs. Backhouse and Son.

GENTIANA ACAULIS.

PLATE XLIX.—FIG. II.

Gentiàna acaúlis, Linnæus. The Stemless Gentian, or Common Gentianella.
Natural Order—Gentianaceæ.* The Gentian Family.

Few persons can have seen this lovely Gentian in flower without having been struck with its extreme beauty, exceeding, as it does, all the other species in brilliancy of colour. It is a native of the Alps of Middle Europe and Siberia, and it has occasionally been found wild in Britain, but it is probable that it has escaped from our gardens, in which it has been long cultivated. It forms one of the most striking and effective of edgings for beds or walks; and it is also most suitable for planting in beds in spring gardens, or on the sunny slopes of rock-work, or for growing in pots. It succeeds best in deep rich fibrous loam and gravel or limestone, with plenty of moisture, and, at the same time, ample drainage. The large solitary tubular deep rich blue flowers are produced in the greatest abundance in April and May. The plant is readily propagated by division (the usual mode), and it may also be raised from seed.

There is a variety of this most beautiful Gentian with the points of the segments of the corolla tipped with white; while another, it is said, has the flowers quite white.

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* The character of the order *Gentianàceæ* will be found in page 50.

PRIMULA GLAUCESCENS.

PLATE L.—FIG. I.

Prímula glaucéscens, Moretti. The Glaucescent-leaved Primrose.
Natural Order—Primulaceæ.* The Primrose Family.

This species was first introduced from Switzerland in 1826; and more recently the Messrs. Backhouse have received it from the Italian Alps around Lake Como. It is a dwarf plant with numerous sessile, rigid, radiately spreading leaves, forming tufts, and with the flowers in umbels on short flower-stalks. It is very nearly related to *P. integrifòlia,* but is readily distinguished from that species by the segments of the calyx being long and taper-pointed instead of short and bluntly rounded. It will be found suitable for planting on rockwork, in well-drained situations in peaty loam and grit. It may be increased by dividing the roots, or by seeds.

This is the *P. calycìna* of Gaudin.

GAULTHERIA PROCUMBENS.

PLATE L.—FIG. II.

Gaulthèria procúmbens, Kalm. The Trailing Gaultheria.
Natural Order—Ericaceæ.† The Heath Family.

The species of *Gaulthèria* are very ornamental small evergreen shrubs,

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* The character of the order *Primulàceæ* will be found in page 14.

† The character of the order *Ericàceæ* will be found in page 23.

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PRIMULA [illegible]

GAULTHERIA PROCUMBENS.

I.

with simple, alternate, exstipulate, toothed, ciliated leaves, and pretty white, rose-coloured, or scarlet flowers, which are axillary and terminal, generally racemose, rarely solitary. They thrive best in peat soil; and they may be increased by dividing the roots, by suckers, by layers, or by seeds. Two species are hardy, viz. *G. procúmbens* and *G. Shállon:* the latter has been employed as an undergrowth in artificial plantations in the North of England and in Scotland, for the sake of the shelter and food which it affords to game. The berries of both species have an agreeable flavour, and are sometimes eaten.

The genus was named by Kalm in honour of M. Gaulthier, a French Physician and Botanist at Quebec, and a writer on Maple Sugar.

G. procúmbens is a very pretty dwarf evergreen shrub, with shining leaves, a native of North America, where (from Canada to Virginia) it is found in damp woods, on mountains, and in sandy places, and whence it was introduced in 1762. It is of easy culture, grows about six inches high, spreads a good deal, and makes very ornamental edgings. It is also very suitable for planting on rockwork, succeeding best in damp shady situations. The elegant bell-shaped flowers are produced from July to September; and they are succeeded by bright red berries, which remain on the plant the greater part of the winter and give it an extremely ornamental appearance. The leaves, if properly cured, make a most excellent tea, which the Canadians use either as a substitute for the Chinese Tea, or in addition to the more ordinary kinds to improve the flavour. In Canada the plant, indeed, is called Mountain Tea, as well as Partridge Berry, and Spring Winter-Green. It propagates itself readily by its creeping roots, or it may be raised from seed.

PENTSTEMON OVATUM.

PLATE LI.

Pentstèmon ovàtum, David Don. The Ovate-leaved Pentstemon.
Natural Order—Scrophulariaceæ.* The Figwort Family.

Nearly all the species of Pentstèmon are very beautiful perennials with smooth opposite leaves, which are generally drawn out to a long point, and with very showy flowers, which are disposed in loose racemes. The shape of the corolla is generally tubular, and decidedly bilabiate, the upper lip being much shorter than the other, which is bearded at the throat; but sometimes it is almost campanulate and five-lobed. The anthers are frequently woolly or hairy. Most of the species are natives of North America. The greater part of them will be found most suitable for planting in mixed borders and in the beds devoted to flowers in shrubberies. They are not difficult to grow, succeeding best in open sunny situations in a mixture of rich loam and peat. They are readily increased by division of the roots, by cuttings, and by seeds.

The name of *Pentstèmon* is from *pente*, five, and *stemon*, a stamen, in allusion to the flowers of the plants belonging to the genus having five stamens, only four of which, however, are perfect, the fifth being imperfect.

P. ovàtum is a hardy perennial, a native of North-west America, where it was discovered by the unfortunate David Douglas, growing plentifully among limestone rocks on the high mountains near the Grand Rapids of the Columbia River, at the distance of one hundred and forty miles from the ocean, and whence it was introduced by him in 1826. It is a very beautiful species, as the flowers, though they are small, are extremely numerous, and of a most lovely brilliant blue; and they are also disposed in a number of small cymes so as to form

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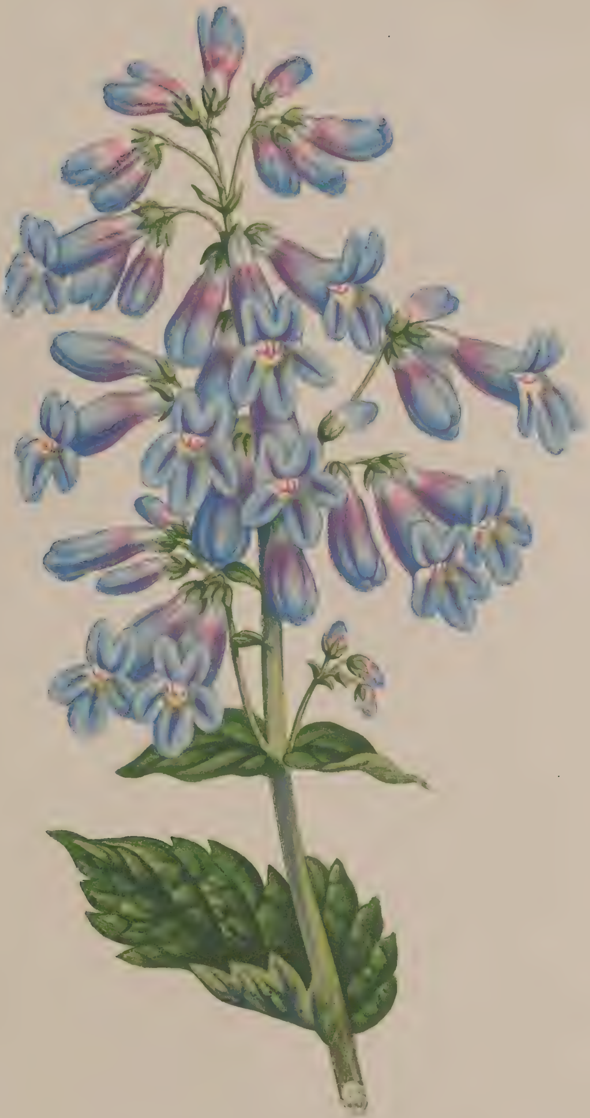
* The character of the order *Scrophulariàceæ* will be found in page 4.



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PENTSTEMON OVATUM.

LI

a large and very handsome panicle. The colour of the flower varies very much: at first it is of a rich ultramarine; gradually, as the flower becomes more expanded, the outside especially becomes of a deep purple, whilst the inside is much more inclined to azure blue. The plant grows about four feet high, succeeding best in calcareous soil, particularly in chalk, or chalk mixed with loam; and it is increased either by seeds, which it ripens freely, or by cuttings.

Messrs. Backhouse and Son were so good as to forward the plant from which the figure in our plate is taken.

LINUM FLAVUM.

PLATE LII.—FIG. I.

Lìnum flàvum, LINNÆUS. The Perennial Yellow Flax.
Natural Order—LINACEÆ.* The Flax Family.

THIS very pretty Flax, which was introduced in 1793, grows, according to Jacquin, by the sides of hedges and among shrubs in mountainous situations in Germany and Switzerland, rarely exceeding a foot in height. It is quite hardy in this country, and is very suitable for planting in the flower border, or on rockwork, in sunny situations, succeeding best in a mixture of light dry sandy peat and loam. The flowers, which expand most in the morning when the sun shines, are of a bright yellow, and are produced in corymbose leafy panicles, appearing in succession during June, July, and part of August. The species may be increased by seeds, which it ripens freely, by division of the roots in the autumn, or by cuttings of the young shoots.

This and several other species (*L. campanulàtum* being one), long recognized by botanists as distinct, were combined by the late A. P. de Candolle under *Línum glandulòsum* of Mœnch.

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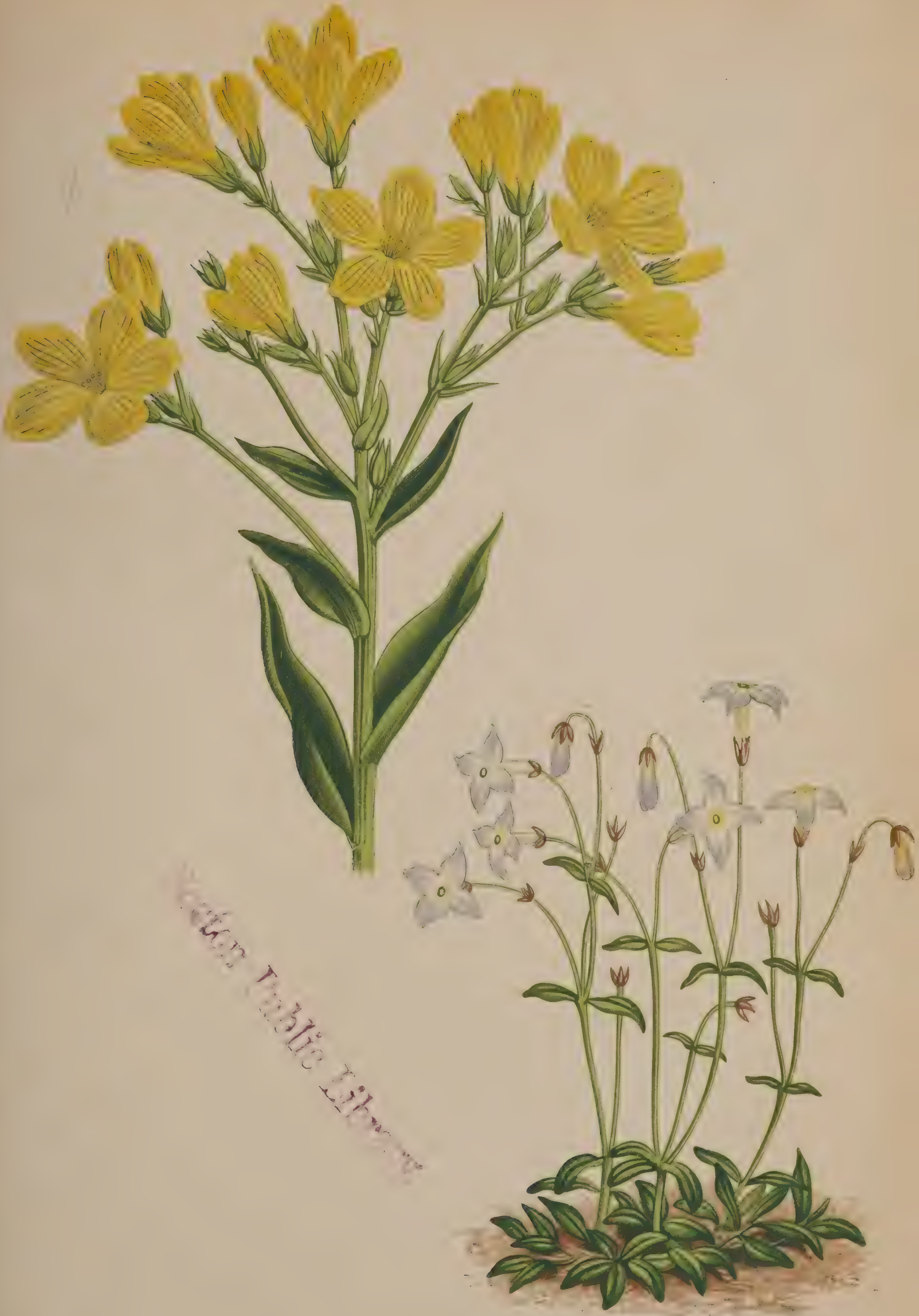
* The character of the order *Linàceæ* has been already given in page 98.



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LINUM FLAVUM. HOUSTONIA CÆRULEA.

LII

HOUSTONIA CÆRULEA.

PLATE LII.—FIG. II.

Houstònia cærùlea, Linnæus. The Blue-flowered Houstonia.
Natural Order—Gentianaceæ.* The Gentian Family.

The species of *Houstònia* are not numerous. They are all pretty elegant little North American plants, very suitable for growing in pots, or for planting in warm sunny situations on rockwork among other very small alpine plants, and succeeding best in moist sandy peat and loam. They are readily increased by dividing the roots in spring.

The genus was named by Gronovius in honour of Dr. William Houston, a celebrated British Botanist, who died in 1733. He was the highly-valued friend and correspondent of Philip Miller, to whom he rendered very valuable assistance in the preparation of *The Gardener's Dictionary.*

H. cærùlea is a native of Virginia, whence it was introduced by the late Mr. Archibald Menzies (who accompanied the expedition under Vancouver) in 1785. It is a hardy perennial, growing extremely well in the open air in the neighbourhood of London, and, if it be kept moist, it will continue producing a succession of its delicate pale blue flowers during the spring, summer, and autumn. The flower-stems, which arise from compact tufts of leaves, grow only two or three inches high, and care must, therefore, be taken that the plant is associated with other small alpines on level spots on rockwork, so that it is not likely to be overgrown.

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* The character of the order *Gentianàceæ* will be found in page 50.

MYOSOTIS DISSITIFLORA.

PLATE LIII.—FIG. I.

Myosòtis dissitiflòra, John Gilbert Baker. The Loose-flowered Early Spring Forget-me-not.
Natural Order—Boraginaceæ.* The Borage Family.

This very beautiful species of *Myosòtis* has been found in Norway and in Switzerland. In our gardens it is best known by the name of *M. montàna.* It is one of the most desirable species of the genus, invaluable for planting in beds in spring gardens, as it begins to flower in February, if the weather happens to be favourable, and continues producing a succession of its lovely deep blue flowers for three or four months. It is a biennial, most closely resembling the Wood Forget-me-not *(M. sylvática),* but it is not so hairy, and has the leaves more gradually tapering to a point; while the ribs on the stem are not so strongly marked. It should be grown in moist peat earth, and regularly watered in dry weather. It is easily raised from seed, and deserves to be most extensively grown.

PRIMULA FARINOSA.

PLATE LIII.—FIG. II.

Prímula farinòsa, Linnæus. The Bird's-Eye, or Mealy Primrose.
Natural Order—Primulaceæ.† The Primrose Family.

This very elegant little Primrose is a somewhat rare British plant,

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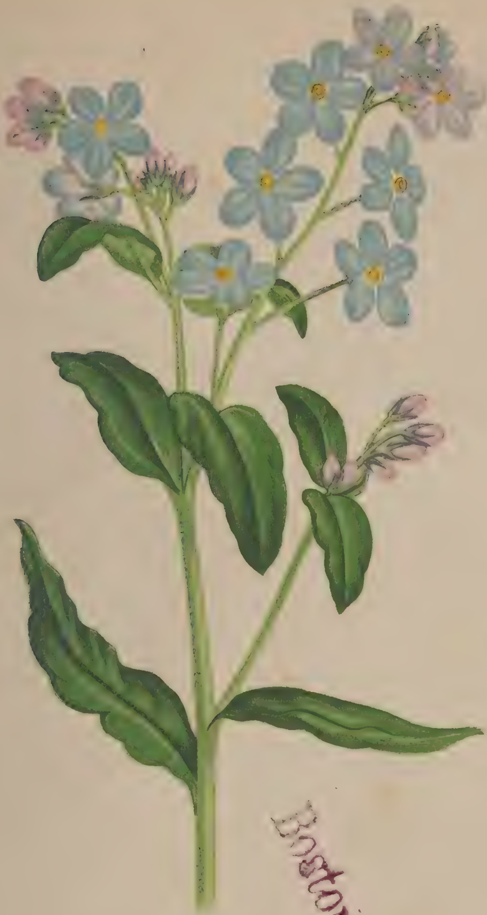
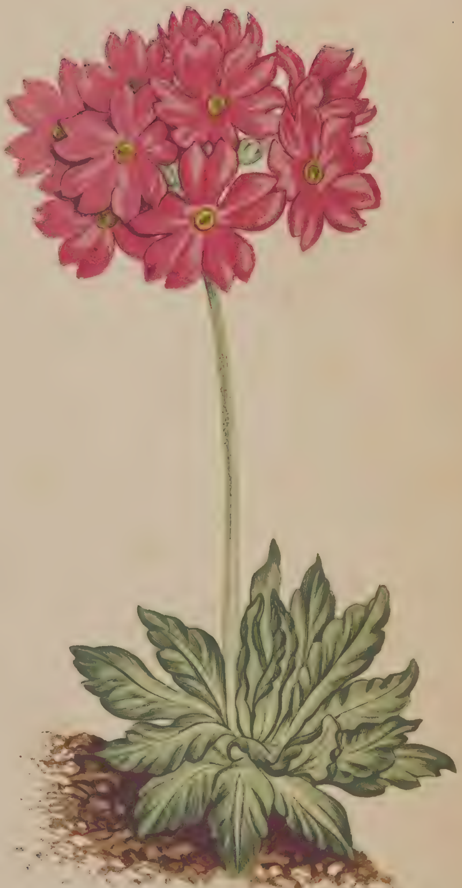
* The character of the order *Boraginàceæ* has been already given in page 126.

† The character of the order *Primulàceæ* will be found in page 14.



MYOSOTIS DISSITIFLORA.



PRIMULA FARINOSA.

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LIII

found in wet pastures and little rills by the sides of mountains in several places in the north of England, and in one place near the Pentland Hills in Scotland. Few alpine plants are more beautiful than this, and few more suitable for planting on the moist ledges of rockwork somewhat in the shade. The leaves, which are clothed with white silvery-looking meal on the under side and are musk-scented when touched, form tufts, from which, during May, June, and July, numerous white-powdered flower-stems rise, from four to eight inches high, crowned with charming clusters of lively pink, rose-coloured, or deep crimson yellow-eyed flowers. Under cultivation the plant attains a somewhat greater height. If grown on rockwork, it should be planted in deep well-drained crevices filled with light fibrous sandy loam and peat with grit. Whether thus grown, or in pots or pans, in which it will succeed very well, perfect drainage should be secured, especially in winter; and it should have an abundant supply of moisture at the root during the summer. It is propagated by division.

There is a very small and interesting variety *(P. farinòsa acaúlis)*, in which the flowers are not borne on flower-stems, but appear amongst the leaves, forming little cushions, both the flowers and the leaves being smaller than those of the species. It may be grown on rockwork or in pots or pans, like the species, but, in the former case, being so small, it will require great care and attention, as there will be danger of its being overgrown by other plants.

The pale-flowered American Bird's-eye Primrose (the *P. pusílla* of Goldie) is nearly allied to *P. farinòsa*, but it has always pale flowers, and they are delightfully fragrant. The species inhabits many parts of Canada, where it is not unfrequently mistaken for the real *P. farinòsa*.

CORONILLA MINIMA.

PLATE LIV.—FIG. I.

Coronílla mínima, LINNÆUS. The Least Coronilla, or Hatchet Vetch.
Natural Order—LEGUMINOSÆ.* The Leguminous Family.

MOST of the greenhouse species of *Coronílla* are very pretty flowering shrubs, which grow best in a mixture of peat and loam, and are readily increased by cuttings and by seeds. Three of these, viz.: *C. valentìna*, *C. glaúca*, and *C. viminàlis*, are valuable as they produce their pretty yellow flowers in winter, and often all the summer. *C. argéntea*, the leaves of which have a silvery appearance,† bears a profusion of flowers which have a strong sweet scent. Two of the shrubby species are hardy, viz.: *C. E'merus* (the Scorpion Senna), which has very pretty red and yellow flowers, and is a very popular plant; and *C. júncea*, which has singular rush-like slender branches, that are partly destitute of leaves. There are several perennial, and one or two annual species: the former are increased by dividing the roots or by seeds, and the latter by seeds only.

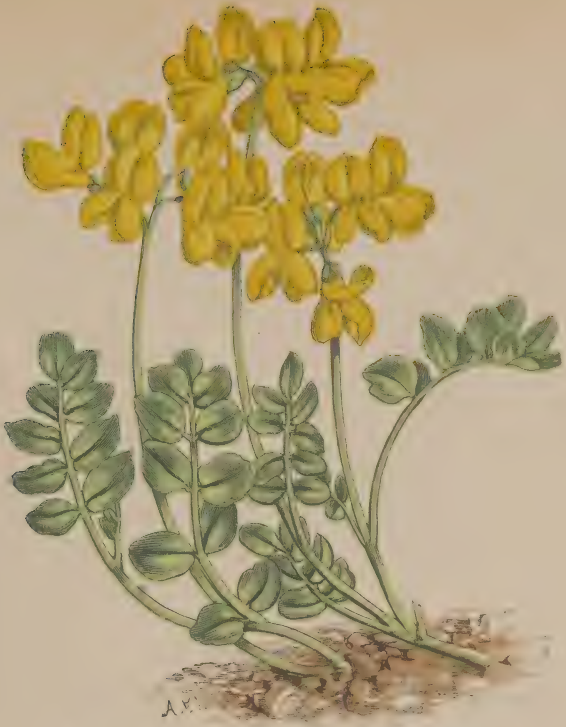
The name of *Coronílla* is from *corona*, a crown, in allusion to the flowers being disposed in little tufts like coronets at the tops of the peduncles.

C. mínima is the smallest of the hardy perennial species, a native of the South of Europe, whence it was introduced in 1658. It is a prostrate evergreen plant, and may either be grown in pots or planted in sunny well-drained fissures on rockwork, in rich loam. The flowers are yellow and are produced in small clusters in May, June, and July.

The figure in our plate is taken from a plant kindly forwarded by Messrs. Backhouse and Son.

* The character of the order *Leguminòsæ* has been already given in page 89.

† The silvery appearance of this plant is occasioned by its being grown in a poor dry soil; and if it be removed into better ground, it will take a glaucous colour, and the contrary.



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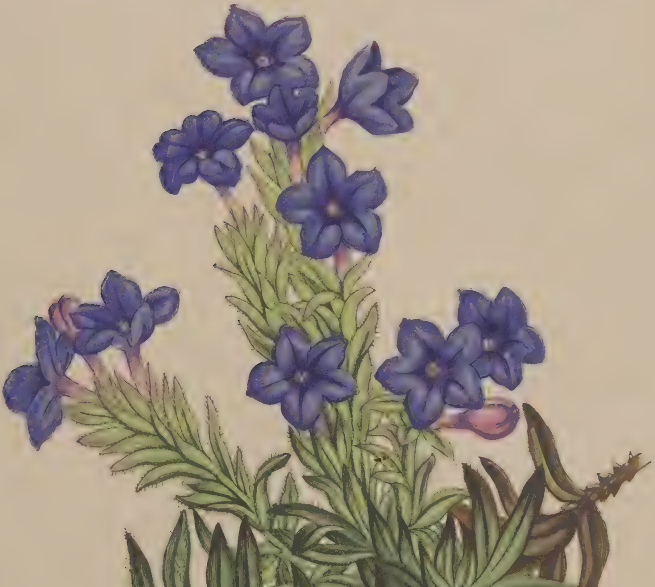

CORONILLA MINIMA.

LITHOSPERMUM PROSTRATUM.

LIV

LITHOSPERMUM PROSTRATUM.

PLATE LIV.—FIG. II.

Lithospérmum prostràtum, La Peyrouse. The prostrate Gromwell.
Natural Order—Boraginaceæ.* The Borage Family.

The species of *Lithospérmum* are annuals, perennials, or undershrubs, more or less hairy, with leafy stems, and blue, white, or yellow flowers, produced in leafy cymes or one-sided spikes. Three of the species are British plants, one of which *(L. arvénse)* is an annual, and the other two *(L. officinàle* and *L. purpùreo-cœrùleum)* are perennials, the last named being somewhat rare. The bark of *L. arvénse* abounds with a deep red dye, which stains paper, linen, etc., and is easily communicated to oily substances, like the Alkanet root (the root of *Anchùsa tinctòria*), which was anciently used for staining the skin, and hence the plant is called Bastard Alkanet as well as Corn Gromwell. The country girls in the north of Sweden stain their faces with the root on days of festivity. The roots of *L. tinctòrium,* a species from the South of Europe, contain a reddish-brown substance used by dyers. *L. officinàle* has stony, brittle, egg-shaped nuts, exquisitely polished, grey or yellowish; and being considered like a stone, were for that reason used as a cure for the disease so named. All the species are easily cultivated, succeeding best in sandy or peaty loam and grit. The shrubby kinds are well adapted for growing on rock-work, or on the tops of walls, where they will speedily establish themselves if allowed to scatter their seeds; or they may be planted in the mixed border, or kept in pots, and increased by cuttings.

The generic name is from *lithos,* a stone, and *sperma,* a seed, in allusion to the nuts or seeds being extremely hard and shining like little polished pebbles.

L. prostràtum is a very ornamental trailing evergreen species, introduced from the South of Europe in 1825, and very suitable for growing either on rockwork or in the mixed border. The leaves are narrow, lance-shaped, and hairy. The flowers, which are of a lovely brilliant blue with faint reddish stripes, are produced in small terminal panicles during May and June.

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* The character of the order *Boraginàceœ* will be found in page 126.

This species is very frequently found under the name of *L. fruticòsum,* but it is quite distinct from that plant, which grows erect.

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